FIG.1

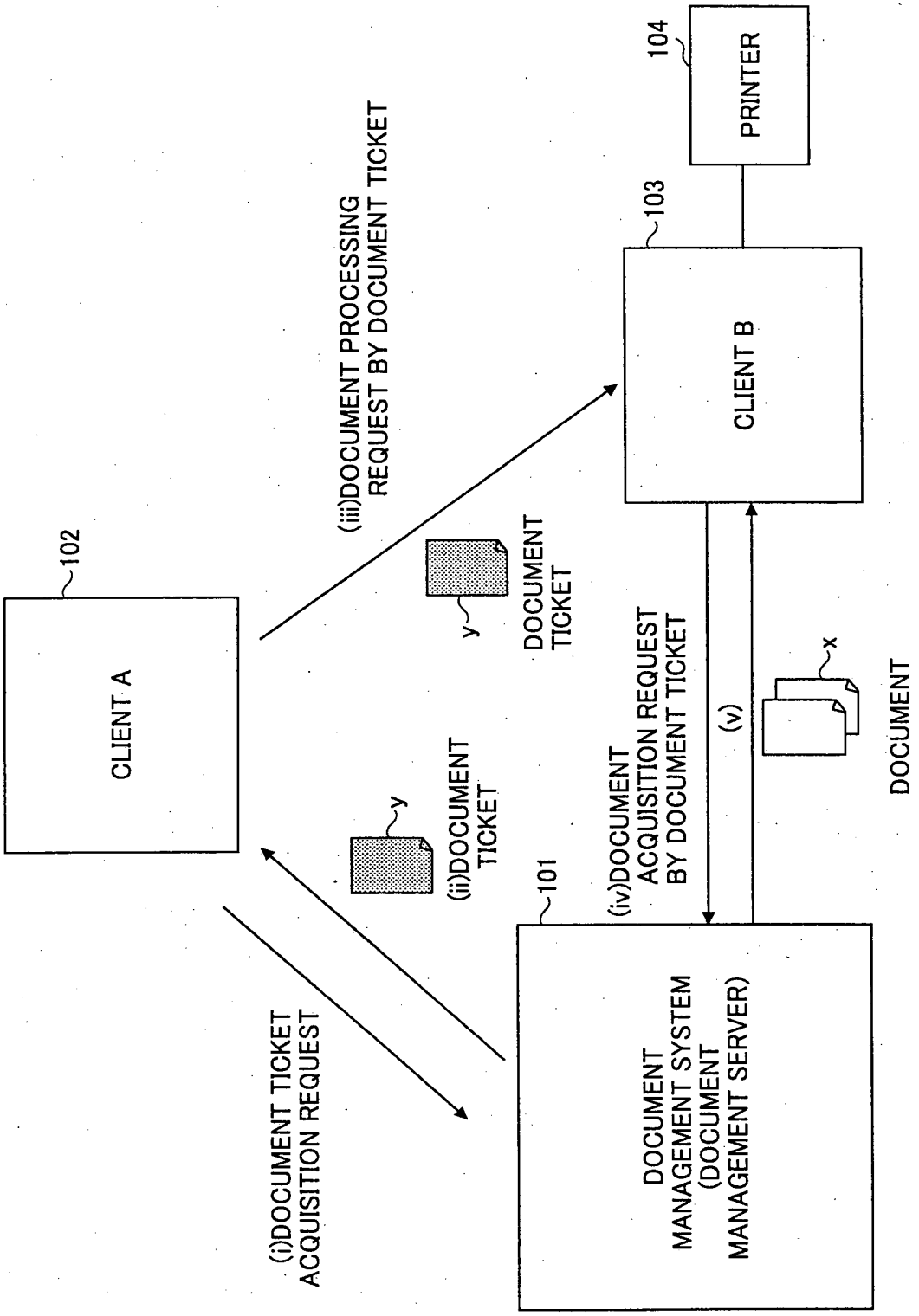

CLIENT A
102
CLIENT B
103
PRINTER
104
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
101
(i)DOCUMENT TICKET ACQUISITION REQUEST
(ii)DOCUMENT TICKET
y
(iii)DOCUMENT PROCESSING REQUEST BY DOCUMENT TICKET
DOCUMENT TICKET
y
(iv)DOCUMENT ACQUISITION REQUEST BY DOCUMENT TICKET
(v)
x
DOCUMENT

FIG.2

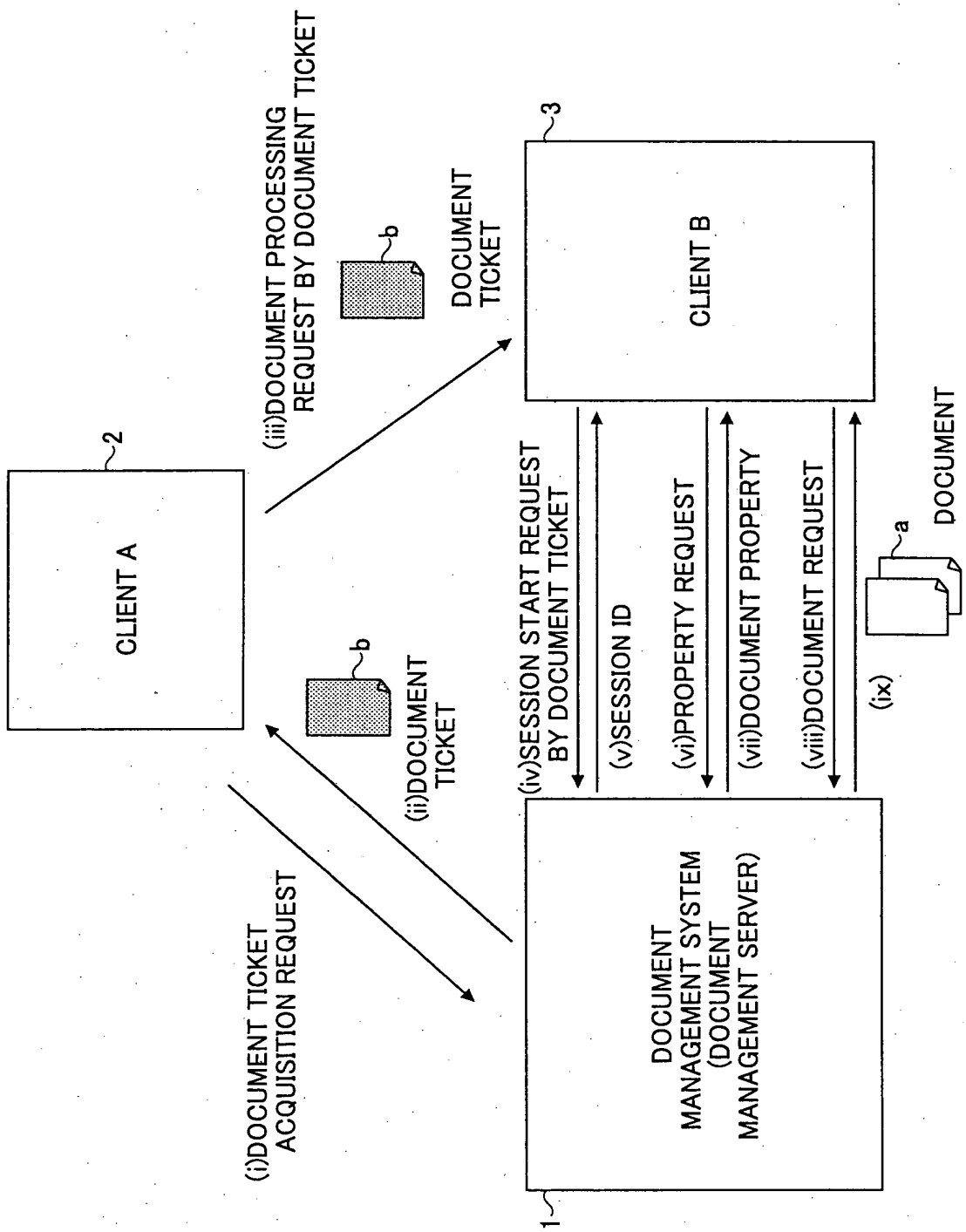

CLIENT A
2
CLIENT B
3
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
1
(i)DOCUMENT TICKET ACQUISITION REQUEST
(ii)DOCUMENT TICKET
b
(iii)DOCUMENT PROCESSING REQUEST BY DOCUMENT TICKET
DOCUMENT TICKET
b
(iv)SESSION START REQUEST BY DOCUMENT TICKET
(v)SESSION ID
(vi)PROPERTY REQUEST
(vii)DOCUMENT PROPERTY
(viii)DOCUMENT REQUEST
(ix)
a
DOCUMENT

FIG.3

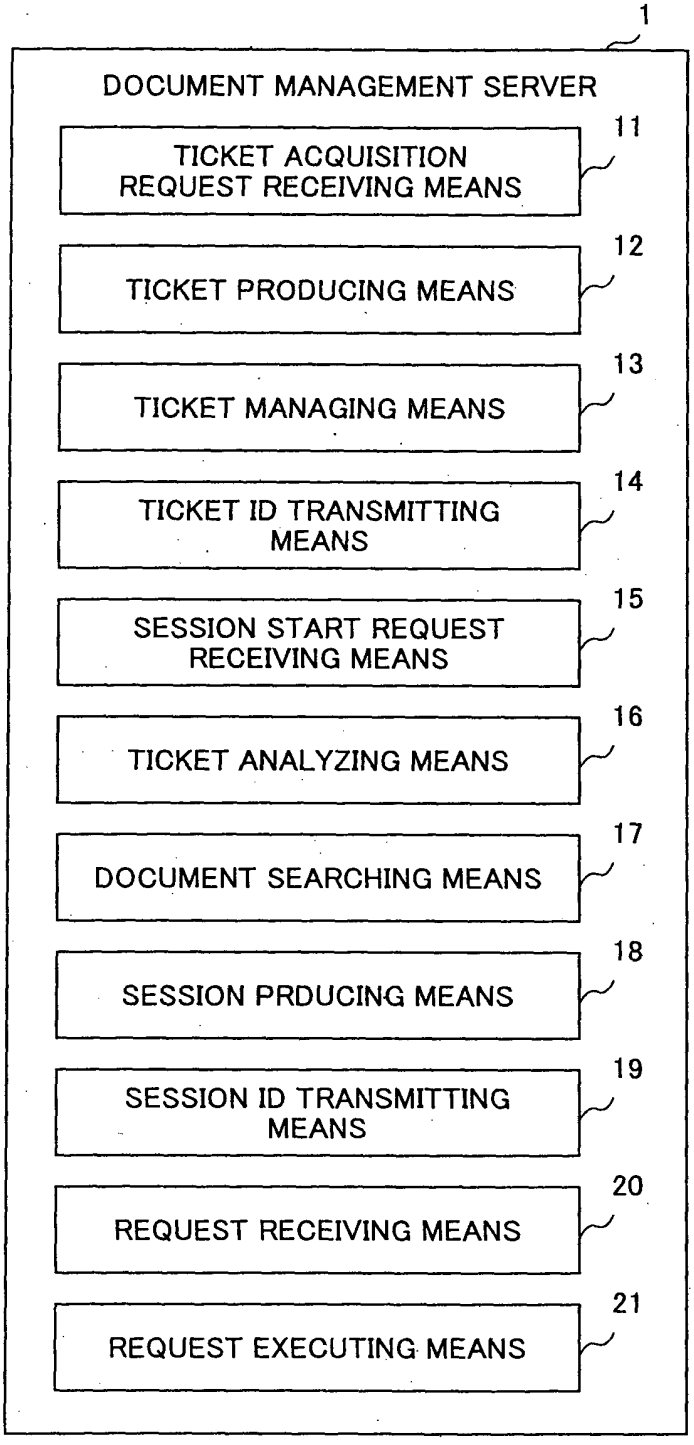

1
DOCUMENT MANAGEMENT SERVER
TICKET ACQUISITION REQUEST RECEIVING MEANS
11
TICKET PRODUCING MEANS
12
TICKET MANAGING MEANS
13
TICKET ID TRANSMITTING MEANS
14
SESSION START REQUEST RECEIVING MEANS
15
TICKET ANALYZING MEANS
16
DOCUMENT SEARCHING MEANS
17
SESSION PRDUCING MEANS
18
SESSION ID TRANSMITTING MEANS
19
REQUEST RECEIVING MEANS
20
REQUEST EXECUTING MEANS
21

FIG.4

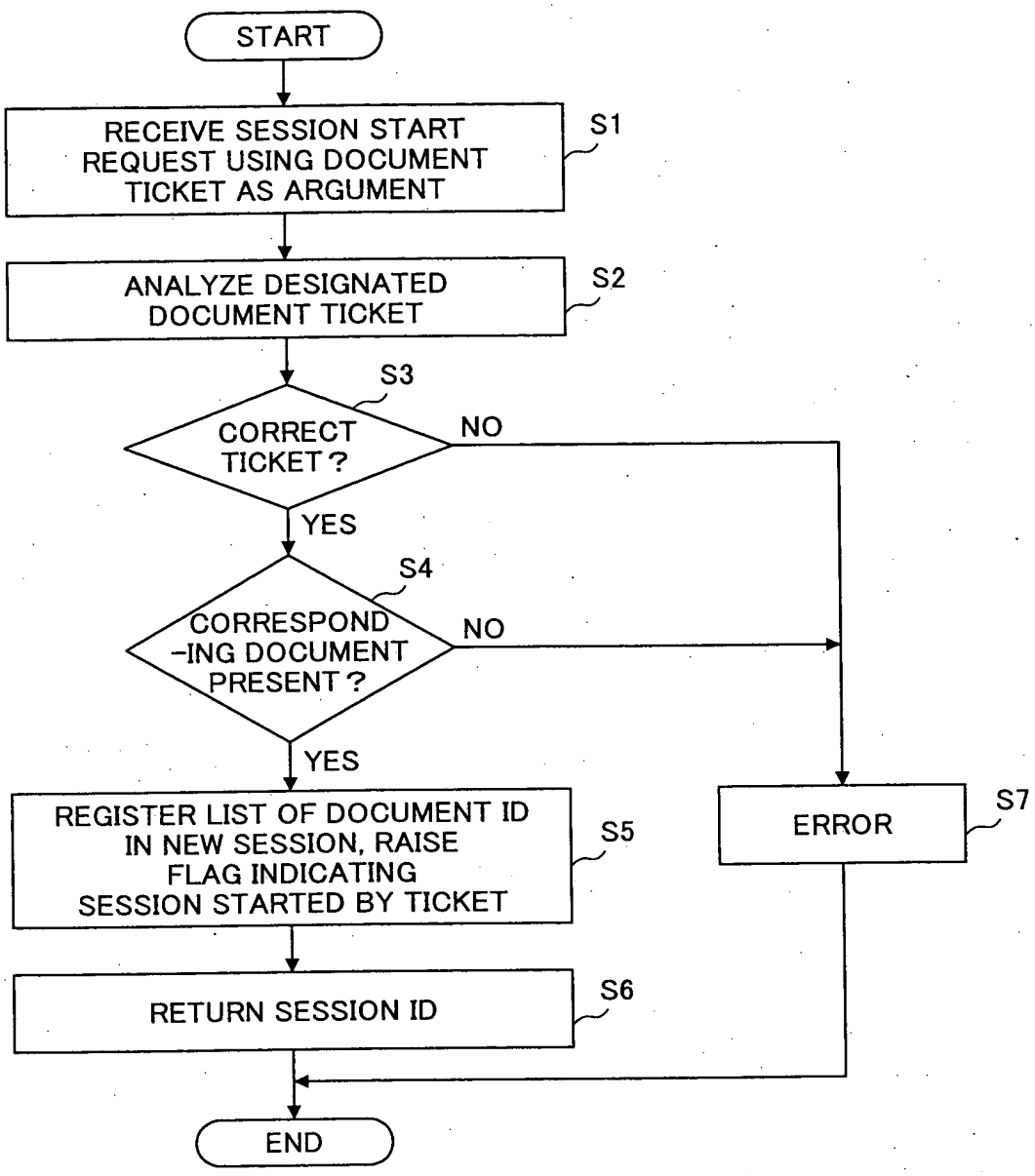

START
RECEIVE SESSION START REQUEST USING DOCUMENT TICKET AS ARGUMENT
S1
ANALYZE DESIGNATED DOCUMENT TICKET
S2
S3
CORRECT TICKET ?
NO
YES
S4
CORRESPOND -ING DOCUMENT PRESENT ?
NO
YES
REGISTER LIST OF DOCUMENT ID IN NEW SESSION, RAISE FLAG INDICATING SESSION STARTED BY TICKET
S5
ERROR
S7
RETURN SESSION ID
S6
END

FIG.5

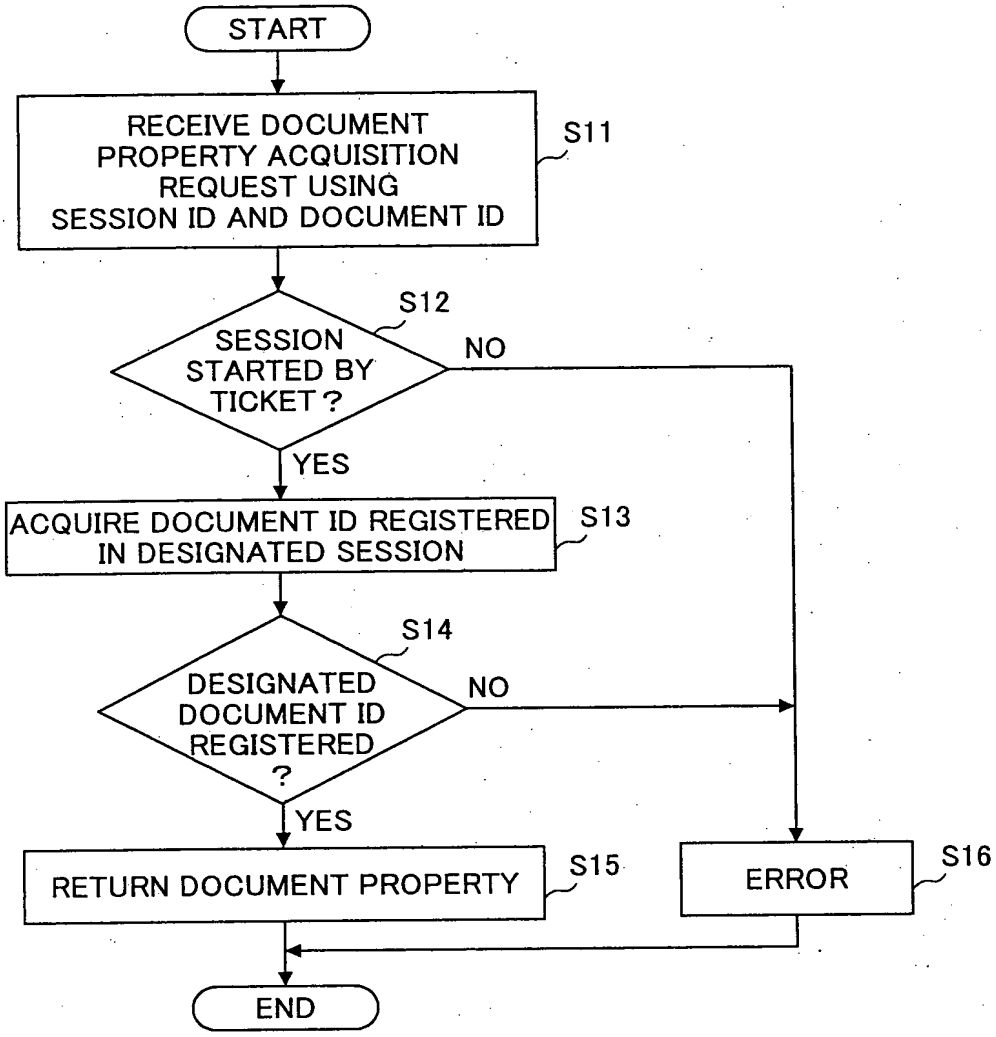

START
RECEIVE DOCUMENT PROPERTY ACQUISITION REQUEST USING SESSION ID AND DOCUMENT ID
S11
SESSION STARTED BY TICKET ?
S12
NO
YES
ACQUIRE DOCUMENT ID REGISTERED IN DESIGNATED SESSION
S13
DESIGNATED DOCUMENT ID REGISTERED ?
S14
NO
YES
RETURN DOCUMENT PROPERTY
S15
ERROR
S16
END

FIG.6

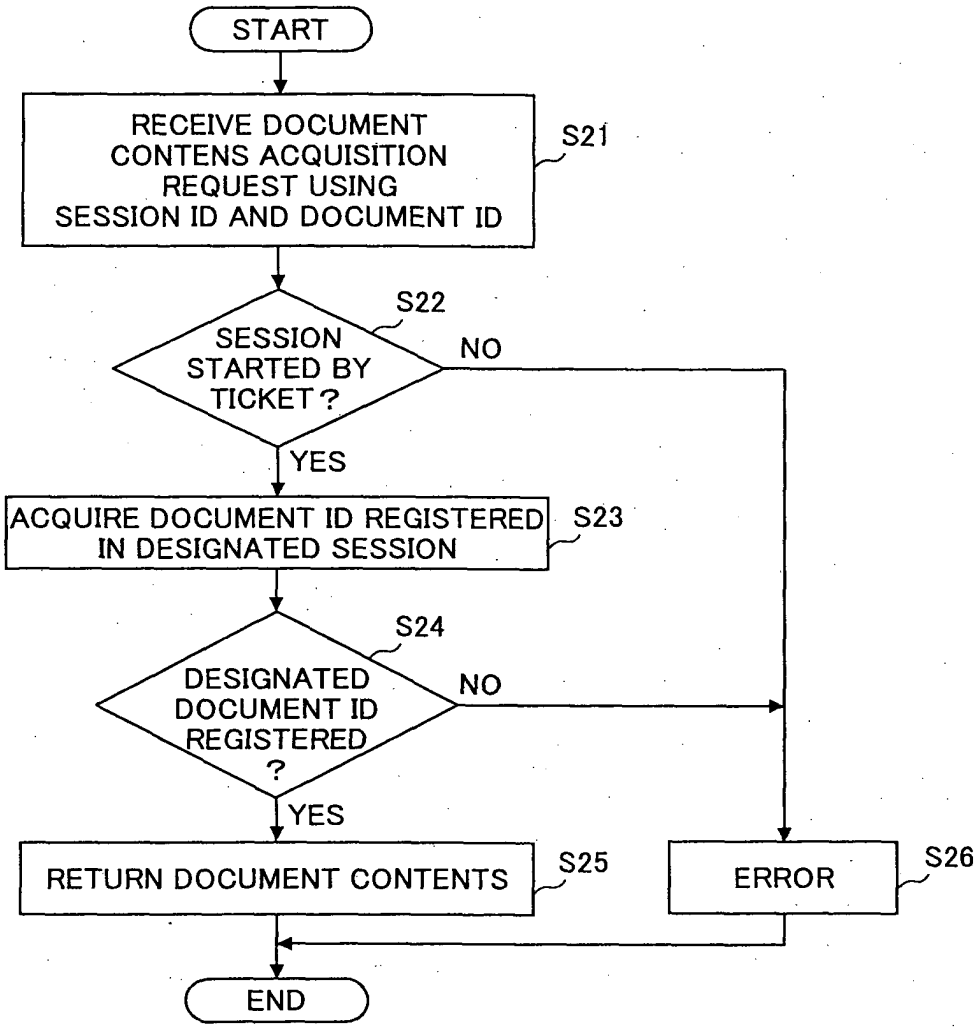

START
RECEIVE DOCUMENT CONTENS ACQUISITION REQUEST USING SESSION ID AND DOCUMENT ID
S21
S22
SESSION STARTED BY TICKET ?
NO
YES
ACQUIRE DOCUMENT ID REGISTERED IN DESIGNATED SESSION
S23
S24
DESIGNATED DOCUMENT ID REGISTERED ?
NO
YES
RETURN DOCUMENT CONTENTS
S25
ERROR
S26
END

FIG.7

31

PROCESS	EXECUTABLE IN SESSION STARTED BY TICKET?
ACQUIRE DOCUMENT PROPERTY	YES
ACQUIRE DOCUMENT CONTENTS	NO

FIG.8

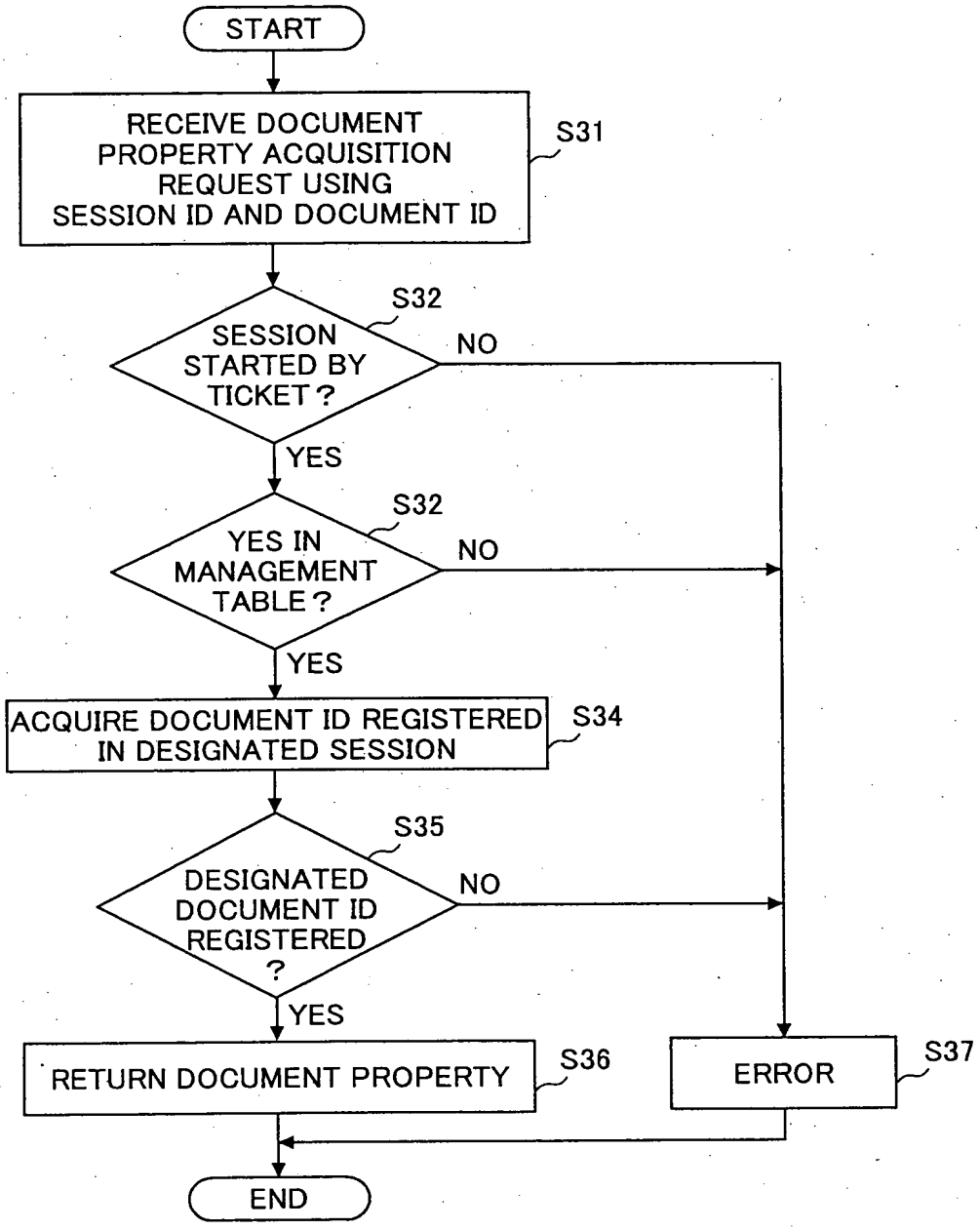

START
RECEIVE DOCUMENT PROPERTY ACQUISITION REQUEST USING SESSION ID AND DOCUMENT ID
S31
S32
SESSION STARTED BY TICKET ?
NO
YES
S32
YES IN MANAGEMENT TABLE ?
NO
YES
ACQUIRE DOCUMENT ID REGISTERED IN DESIGNATED SESSION
S34
S35
DESIGNATED DOCUMENT ID REGISTERED ?
NO
YES
RETURN DOCUMENT PROPERTY
S36
ERROR
S37
END

FIG.9

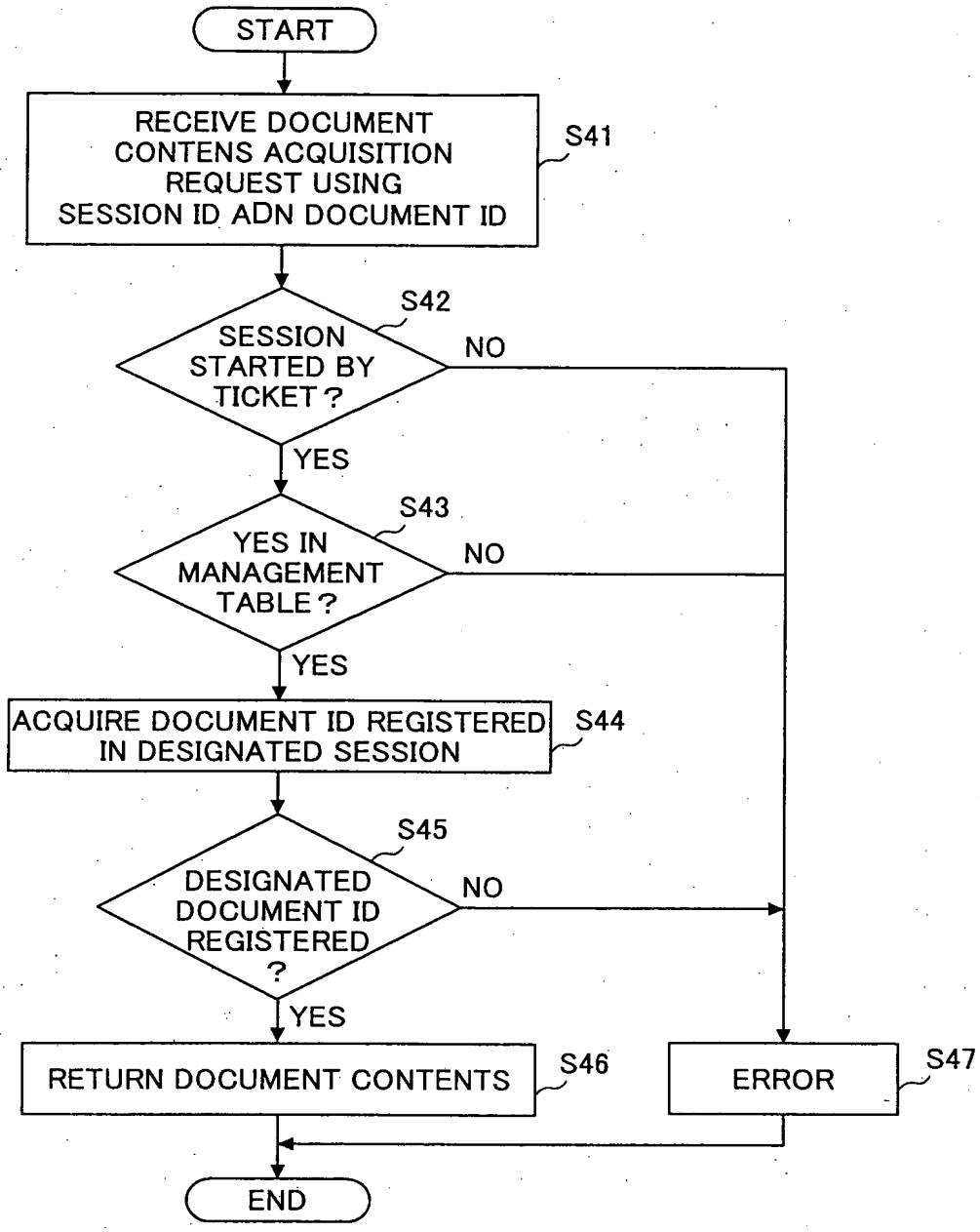

START
RECEIVE DOCUMENT CONTENS ACQUISITION REQUEST USING SESSION ID ADN DOCUMENT ID
S41
SESSION STARTED BY TICKET ?
S42
NO
YES
YES IN MANAGEMENT TABLE ?
S43
NO
YES
ACQUIRE DOCUMENT ID REGISTERED IN DESIGNATED SESSION
S44
DESIGNATED DOCUMENT ID REGISTERED ?
S45
NO
YES
RETURN DOCUMENT CONTENTS
S46
ERROR
S47
END

FIG.10

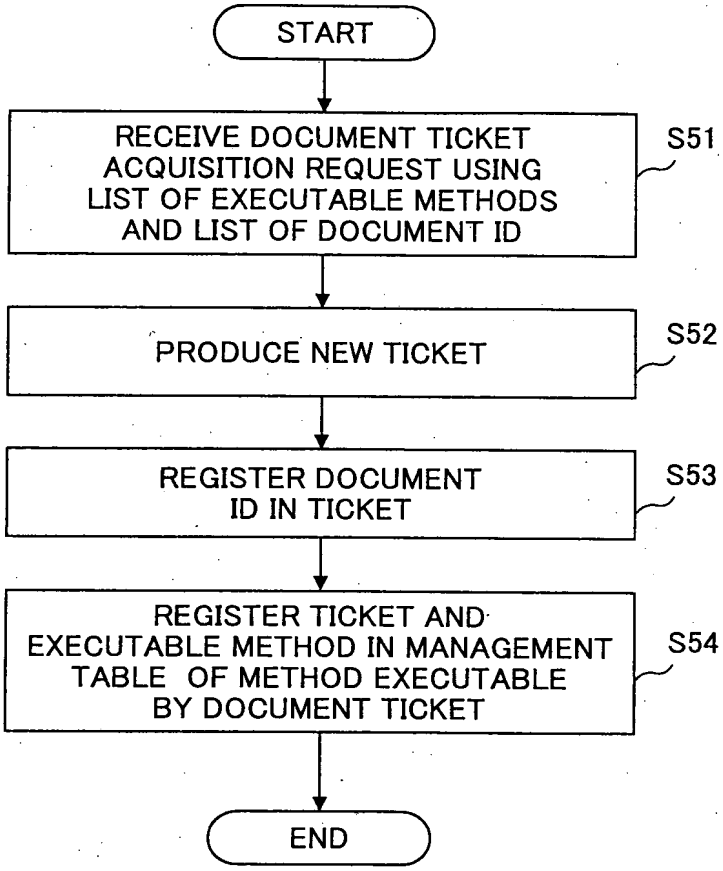

START
RECEIVE DOCUMENT TICKET ACQUISITION REQUEST USING LIST OF EXECUTABLE METHODS AND LIST OF DOCUMENT ID
S51
PRODUCE NEW TICKET
S52
REGISTER DOCUMENT ID IN TICKET
S53
REGISTER TICKET AND EXECUTABLE METHOD IN MANAGEMENT TABLE OF METHOD EXECUTABLE BY DOCUMENT TICKET
S54
END

FIG.11

32

TICKET ID	ACQUISITION OF DOCUMENT PROPERTY	ACQUISITION OF DOCUMENT CONTENTS
ticket1	OK	OK
ticket2	OK	NO
ticket3	NO	NO

FIG.12

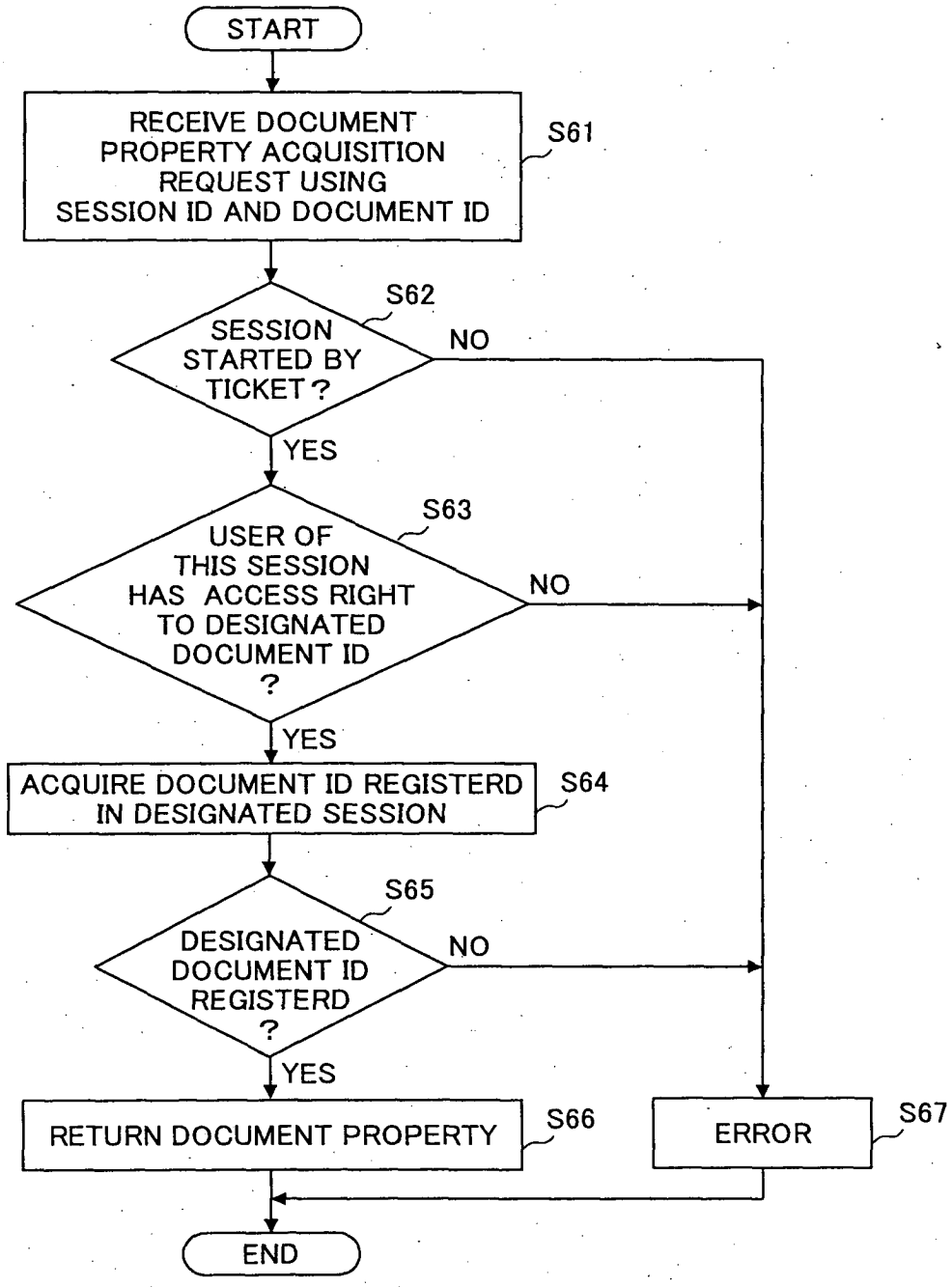

START
RECEIVE DOCUMENT PROPERTY ACQUISITION REQUEST USING SESSION ID AND DOCUMENT ID
S61
SESSION STARTED BY TICKET ?
S62
NO
YES
USER OF THIS SESSION HAS ACCESS RIGHT TO DESIGNATED DOCUMENT ID ?
S63
NO
YES
ACQUIRE DOCUMENT ID REGISTERD IN DESIGNATED SESSION
S64
DESIGNATED DOCUMENT ID REGISTERD ?
S65
NO
YES
RETURN DOCUMENT PROPERTY
S66
ERROR
S67
END

FIG.13

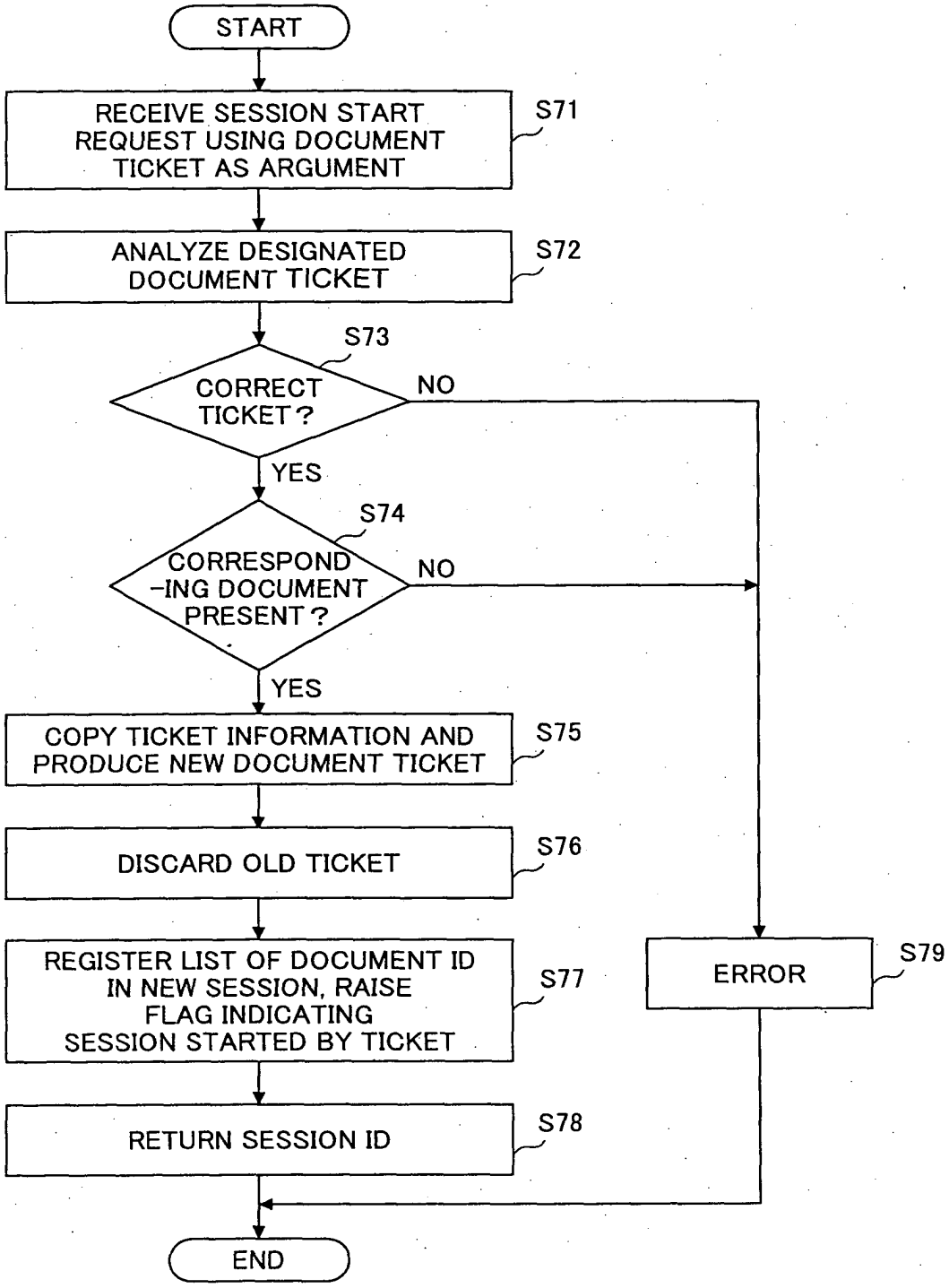

START
RECEIVE SESSION START REQUEST USING DOCUMENT TICKET AS ARGUMENT
S71
ANALYZE DESIGNATED DOCUMENT TICKET
S72
S73
CORRECT TICKET ?
NO
YES
S74
CORRESPOND -ING DOCUMENT PRESENT ?
NO
YES
COPY TICKET INFORMATION AND PRODUCE NEW DOCUMENT TICKET
S75
DISCARD OLD TICKET
S76
REGISTER LIST OF DOCUMENT ID IN NEW SESSION, RAISE FLAG INDICATING SESSION STARTED BY TICKET
S77
ERROR
S79
RETURN SESSION ID
S78
END

FIG.14

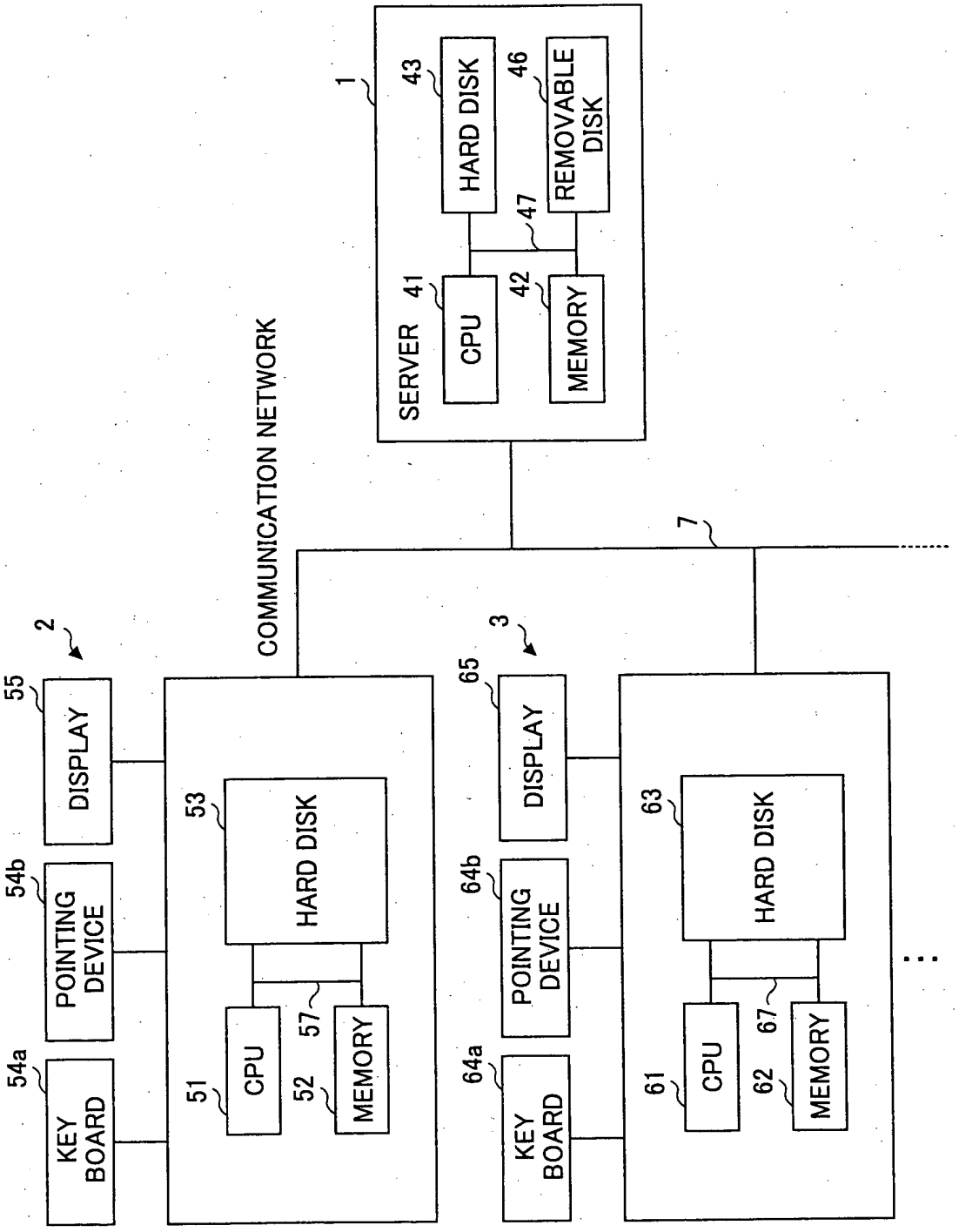

1
SERVER
41
CPU
42
MEMORY
43
HARD DISK
46
REMOVABLE DISK
47
COMMUNICATION NETWORK
7
2
55
DISPLAY
54b
POINTING DEVICE
54a
KEY BOARD
51
CPU
52
MEMORY
53
HARD DISK
57
3
65
DISPLAY
64b
POINTING DEVICE
64a
KEY BOARD
61
CPU
62
MEMORY
63
HARD DISK
67

FIG.15

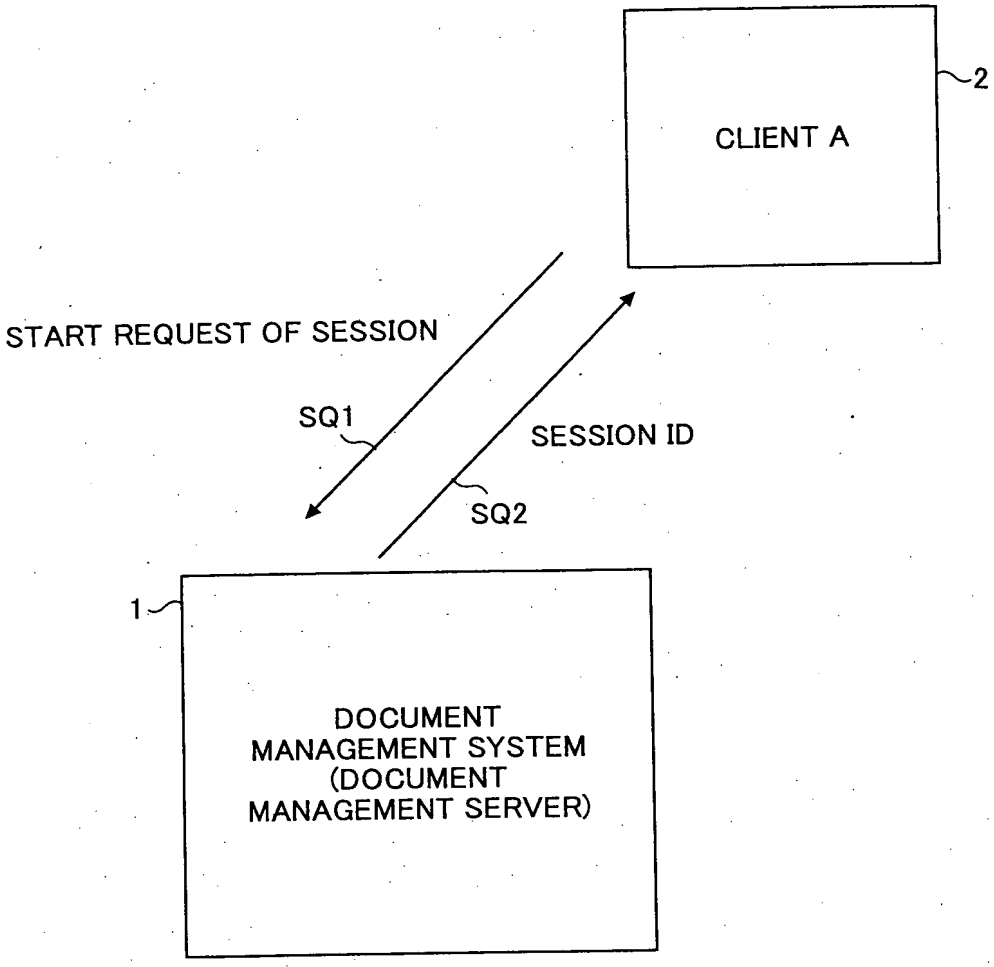


FIG.16

Attachment getDocContent(String sessionId, String docId)

FIG.17

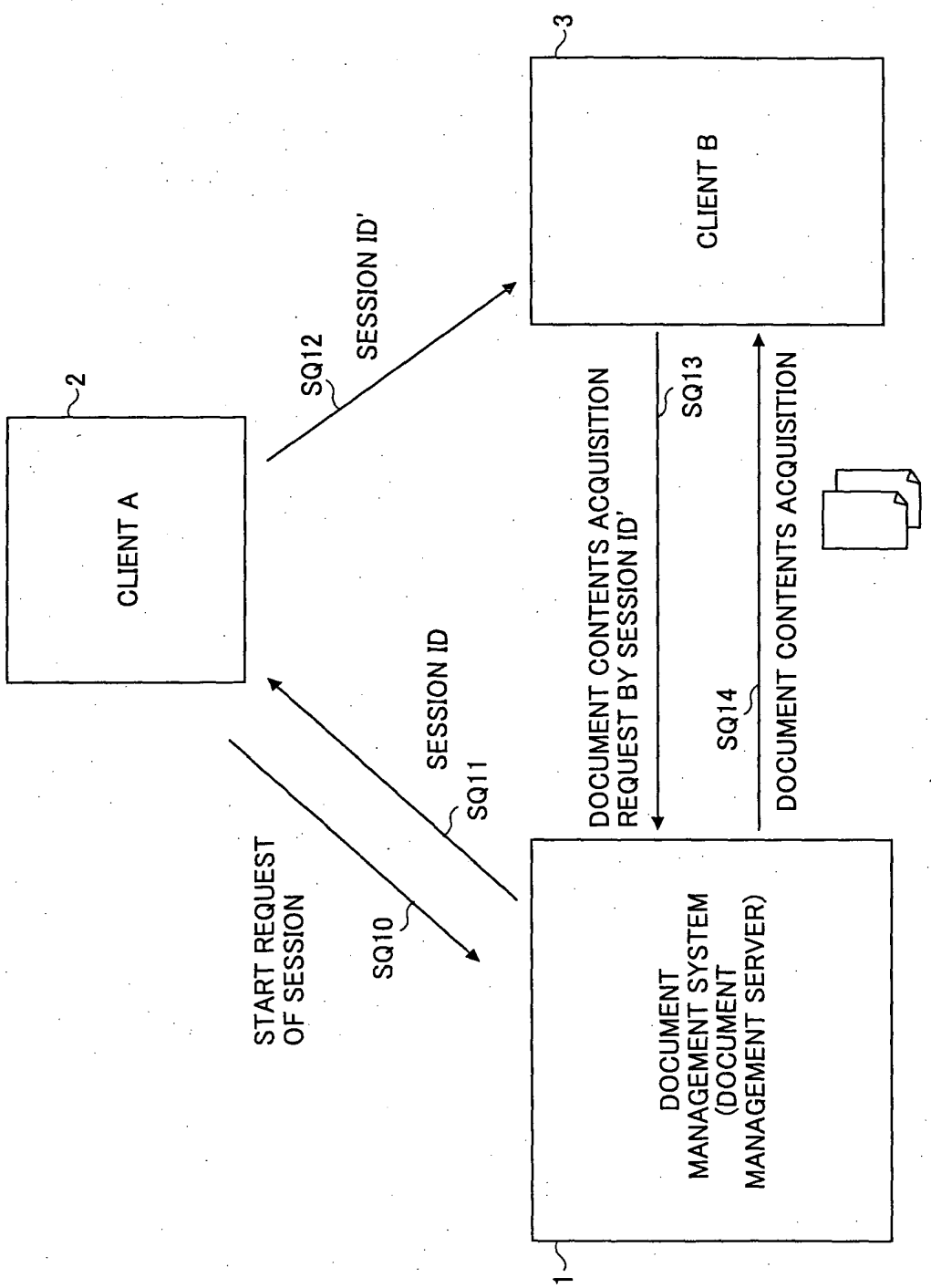

CLIENT A
2
CLIENT B
3
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
1
START REQUEST OF SESSION
SQ10
SESSION ID
SQ11
SQ12
SESSION ID'
DOCUMENT CONTENTS ACQUISITION REQUEST BY SESSION ID'
SQ13
SQ14
DOCUMENT CONTENTS ACQUISITION

FIG.18

5468741654168787 46?did= D123543843483456856

ORIGINAL SESSION ID

DOCUMENT ID OF OBJECT TO BE OPERATED

FIG.19

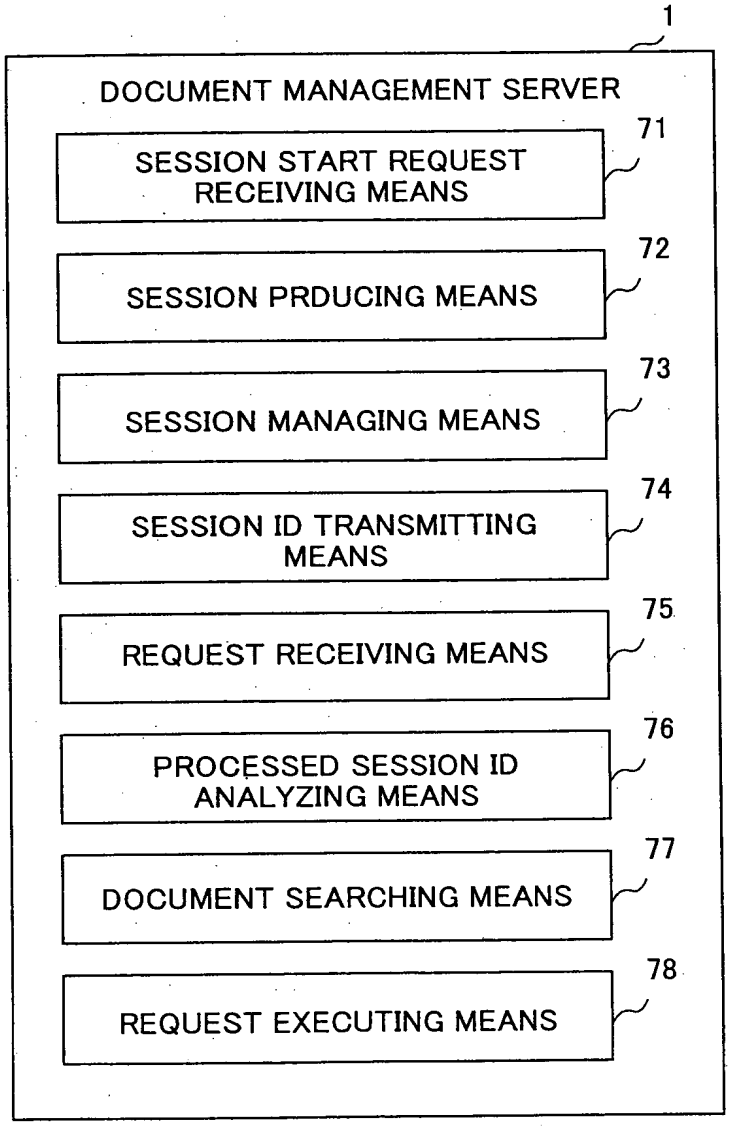


FIG.20

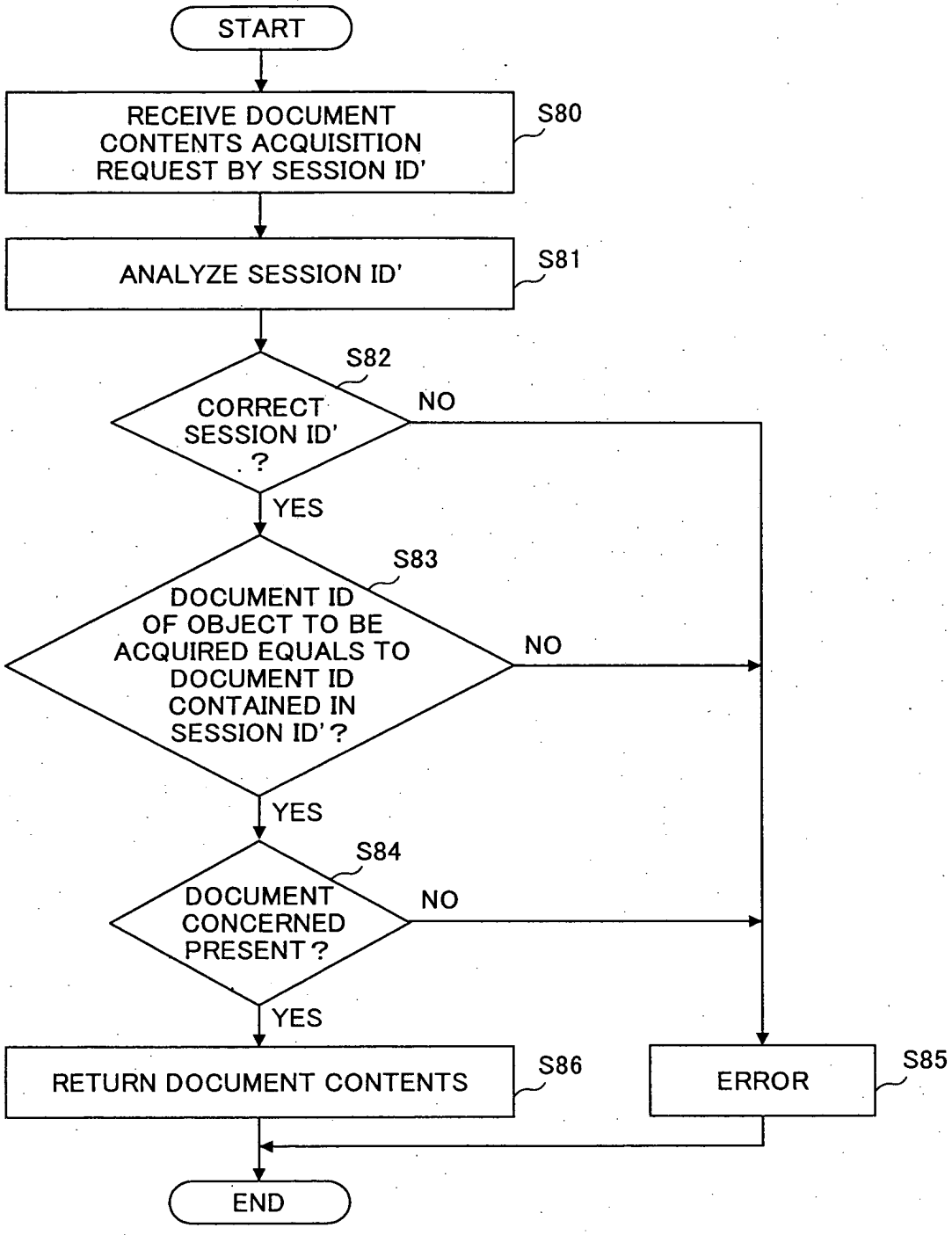

START
RECEIVE DOCUMENT CONTENTS ACQUISITION REQUEST BY SESSION ID'
S80
ANALYZE SESSION ID'
S81
S82
CORRECT SESSION ID' ?
NO
YES
S83
DOCUMENT ID OF OBJECT TO BE ACQUIRED EQUALS TO DOCUMENT ID CONTAINED IN SESSION ID'?
NO
YES
S84
DOCUMENT CONCERNED PRESENT?
NO
YES
RETURN DOCUMENT CONTENTS
S86
ERROR
S85
END

FIG.21

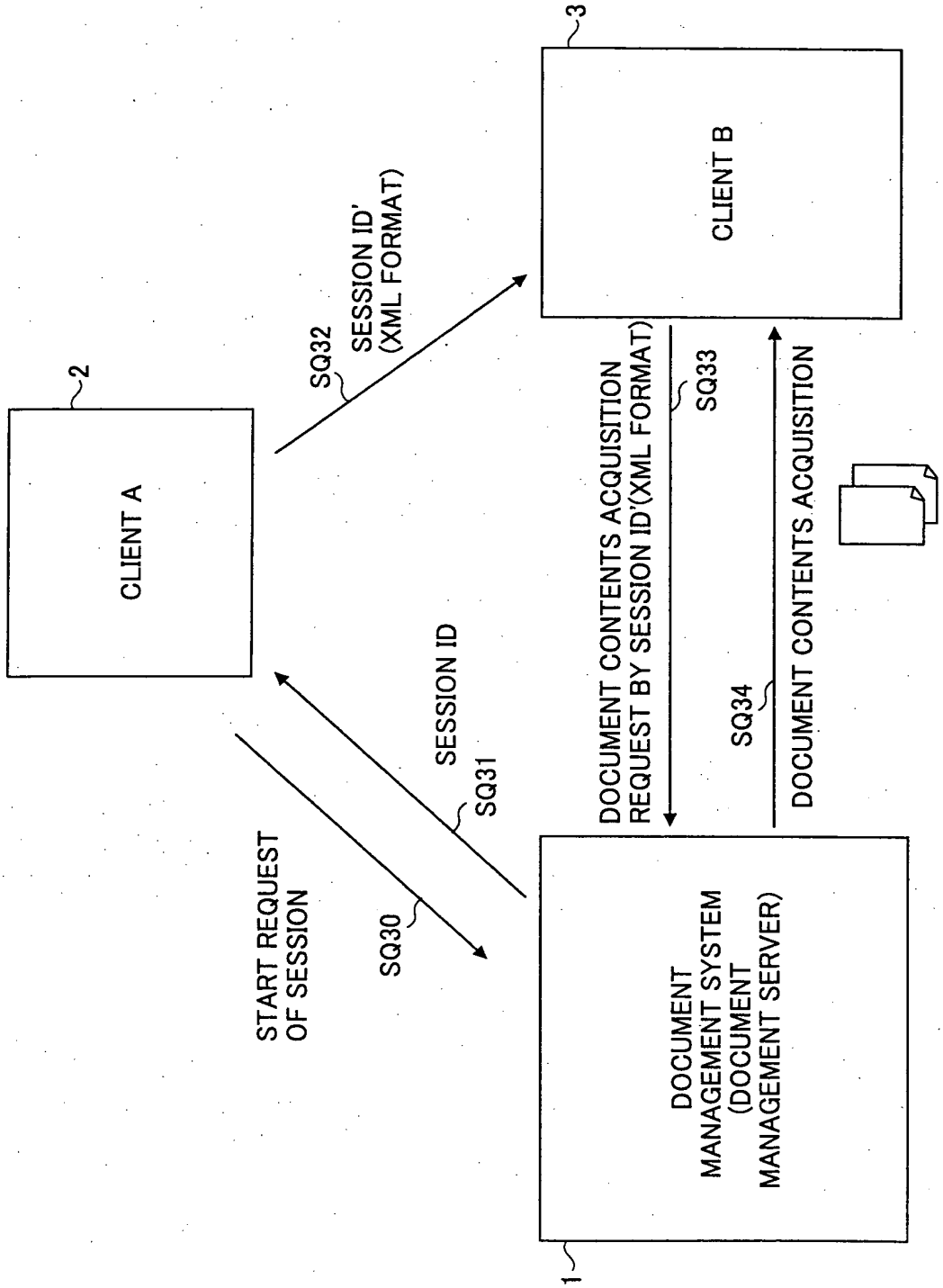

CLIENT A
2
CLIENT B
3
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
1
START REQUEST OF SESSION
SQ30
SESSION ID
SQ31
SQ32
SESSION ID' (XML FORMAT)
DOCUMENT CONTENTS ACQUISITION REQUEST BY SESSION ID'(XML FORMAT)
SQ33
SQ34
DOCUMENT CONTENTS ACQUISITION

FIG.22

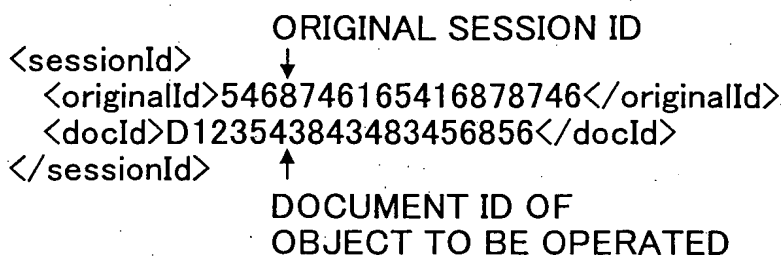

ORIGINAL SESSION ID
<sessionId>
<originalId>5468746165416878746</originalId>
<docId>D12354384348345 6856</docId>
</sessionId>
DOCUMENT ID OF
OBJECT TO BE OPERATED

FIG.23

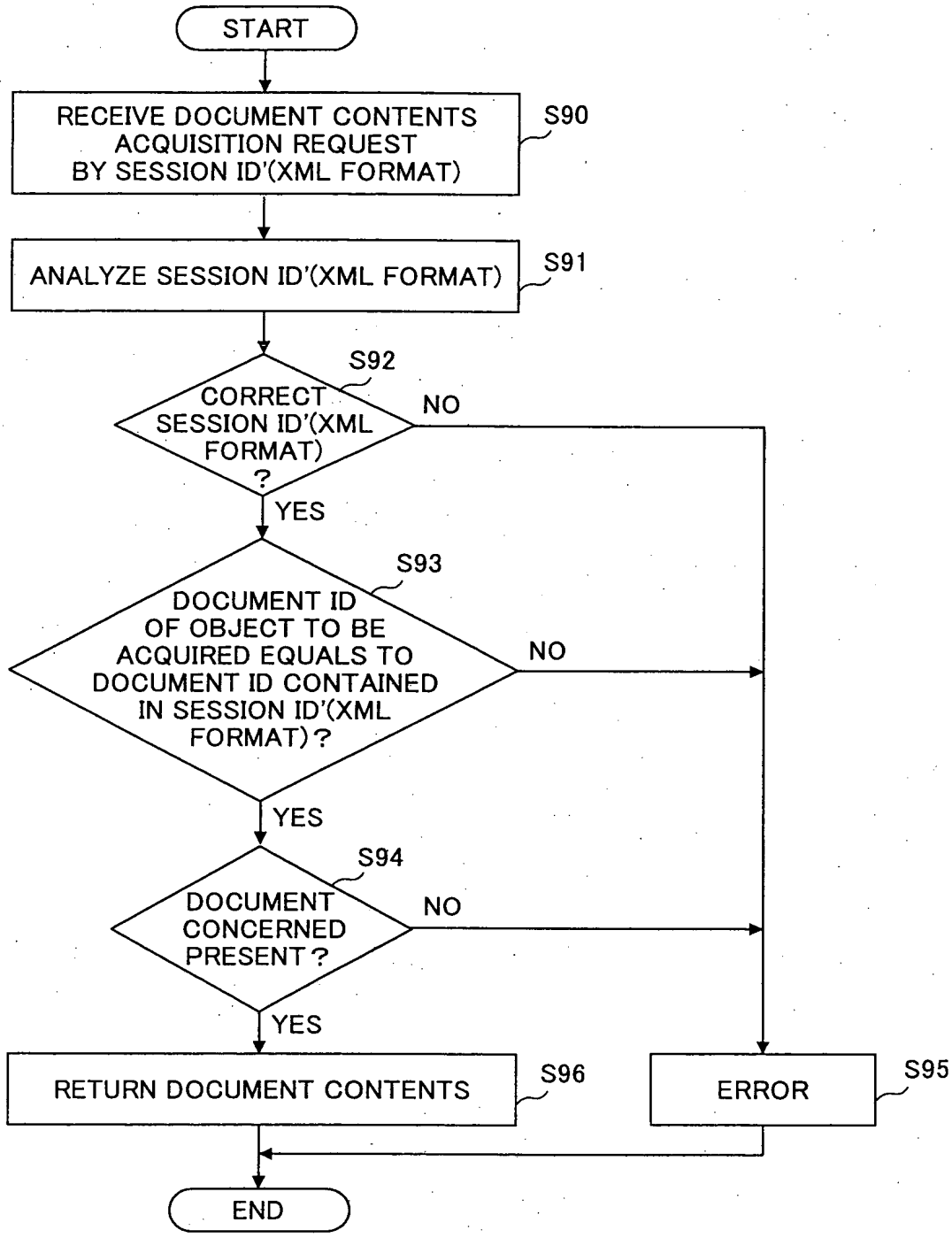

START
RECEIVE DOCUMENT CONTENTS ACQUISITION REQUEST BY SESSION ID'(XML FORMAT)
S90
ANALYZE SESSION ID'(XML FORMAT)
S91
S92
CORRECT SESSION ID'(XML FORMAT) ?
NO
YES
S93
DOCUMENT ID OF OBJECT TO BE ACQUIRED EQUALS TO DOCUMENT ID CONTAINED IN SESSION ID'(XML FORMAT)?
NO
YES
S94
DOCUMENT CONCERNED PRESENT?
NO
YES
RETURN DOCUMENT CONTENTS
S96
ERROR
S95
END

FIG.24

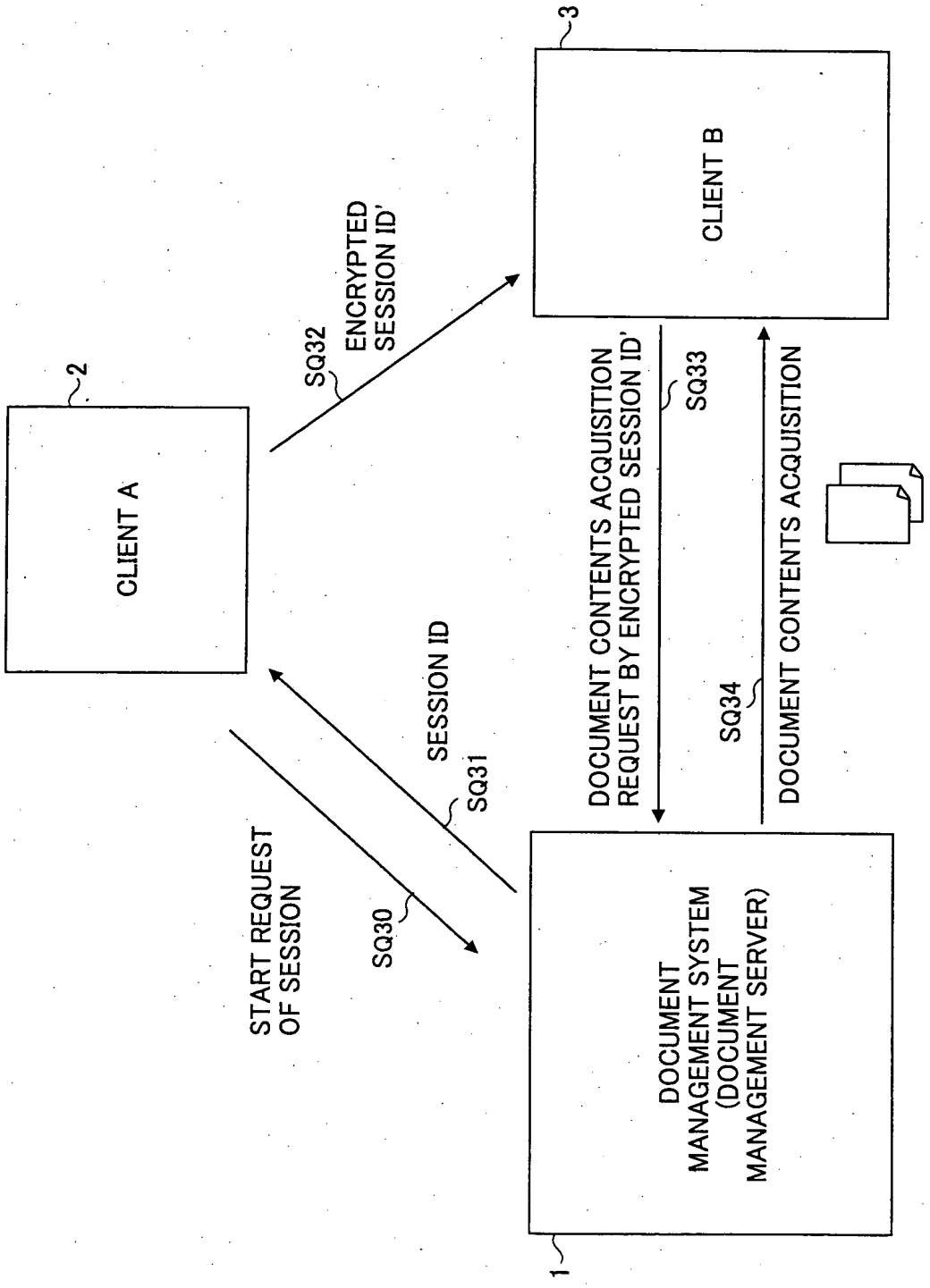

CLIENT A
2
CLIENT B
3
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
1
START REQUEST OF SESSION
SQ30
SESSION ID
SQ31
SQ32
ENCRYPTED SESSION ID'
DOCUMENT CONTENTS ACQUISITION REQUEST BY ENCRYPTED SESSION ID'
SQ33
SQ34
DOCUMENT CONTENTS ACQUISITION

FIG.25

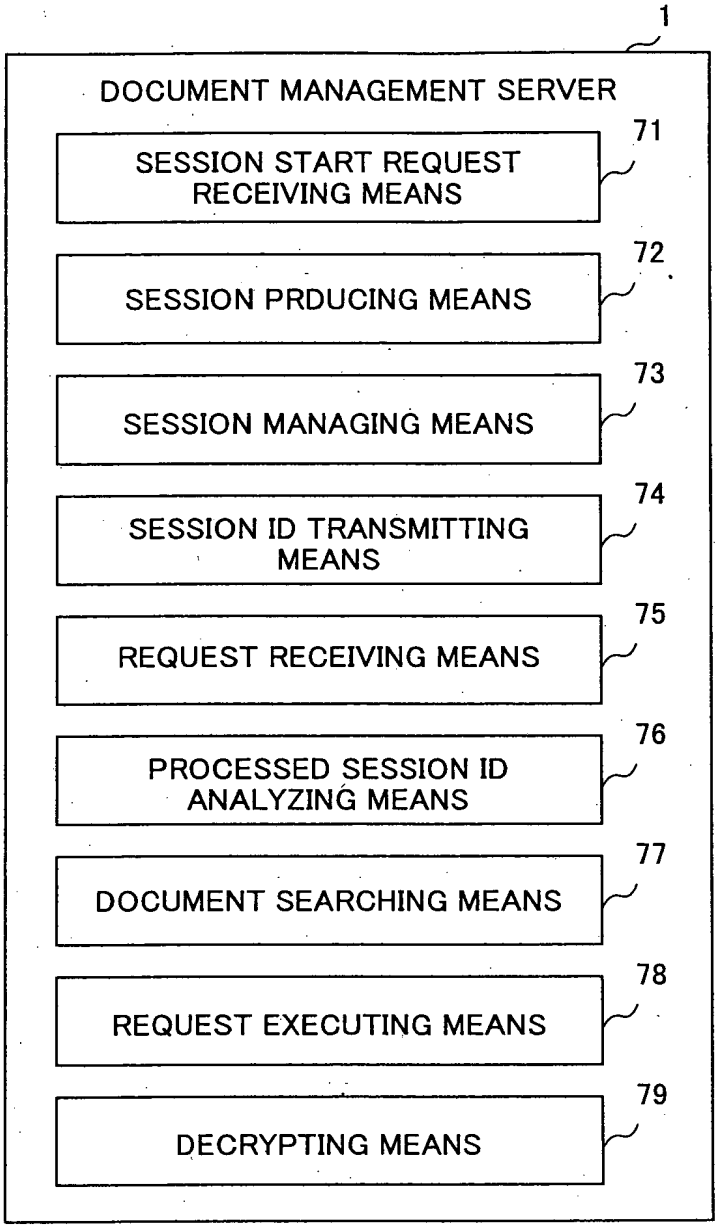

1
DOCUMENT MANAGEMENT SERVER
SESSION START REQUEST RECEIVING MEANS
71
SESSION PRDUCING MEANS
72
SESSION MANAGING MEANS
73
SESSION ID TRANSMITTING MEANS
74
REQUEST RECEIVING MEANS
75
PROCESSED SESSION ID ANALYZING MEANS
76
DOCUMENT SEARCHING MEANS
77
REQUEST EXECUTING MEANS
78
DECRYPTING MEANS
79

FIG.26

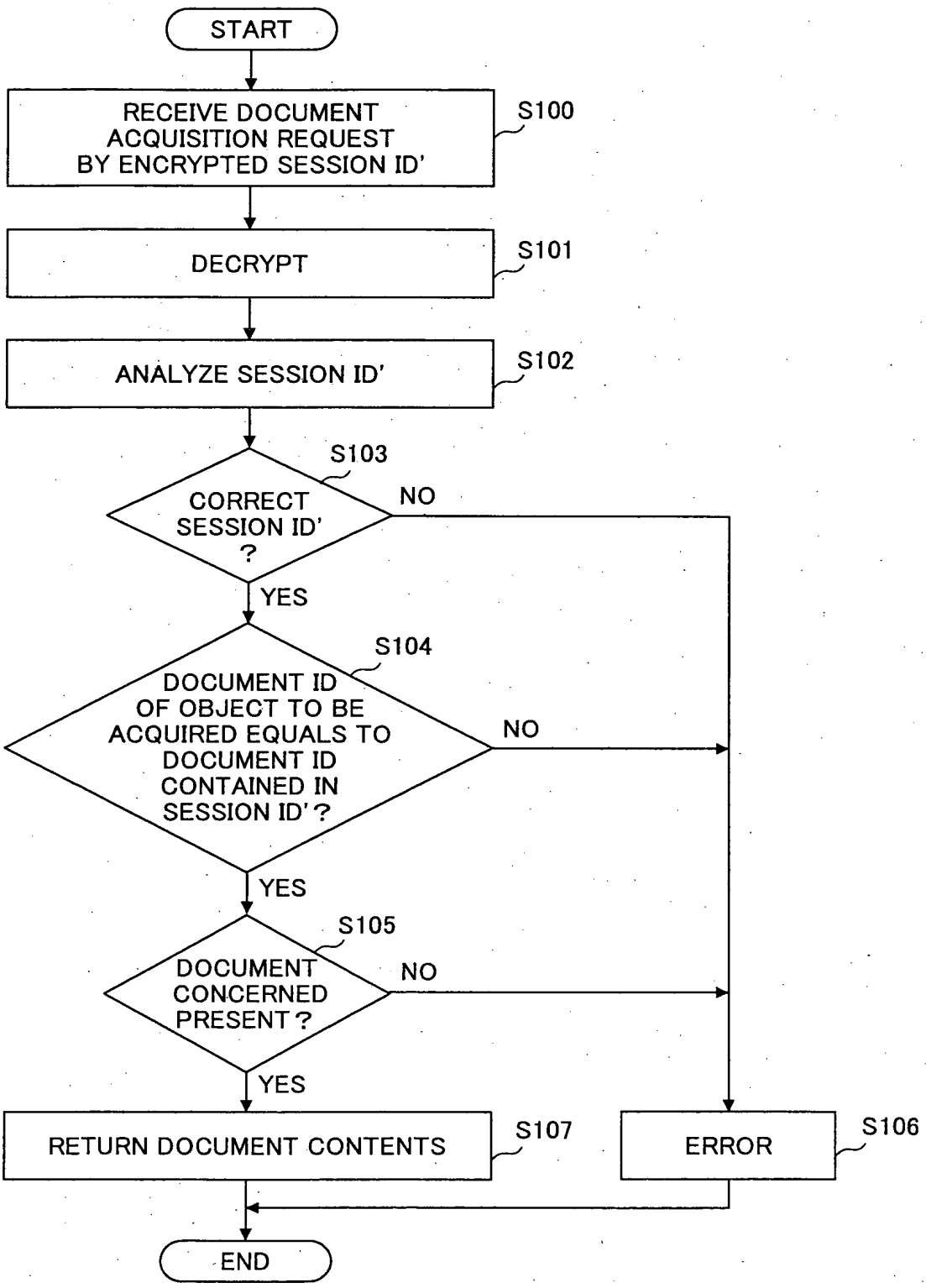

START
RECEIVE DOCUMENT ACQUISITION REQUEST BY ENCRYPTED SESSION ID'
S100
DECRYPT
S101
ANALYZE SESSION ID'
S102
S103
CORRECT SESSION ID' ?
NO
YES
S104
DOCUMENT ID OF OBJECT TO BE ACQUIRED EQUALS TO DOCUMENT ID CONTAINED IN SESSION ID' ?
NO
YES
S105
DOCUMENT CONCERNED PRESENT ?
NO
YES
RETURN DOCUMENT CONTENTS
S107
ERROR
S106
END

FIG.27

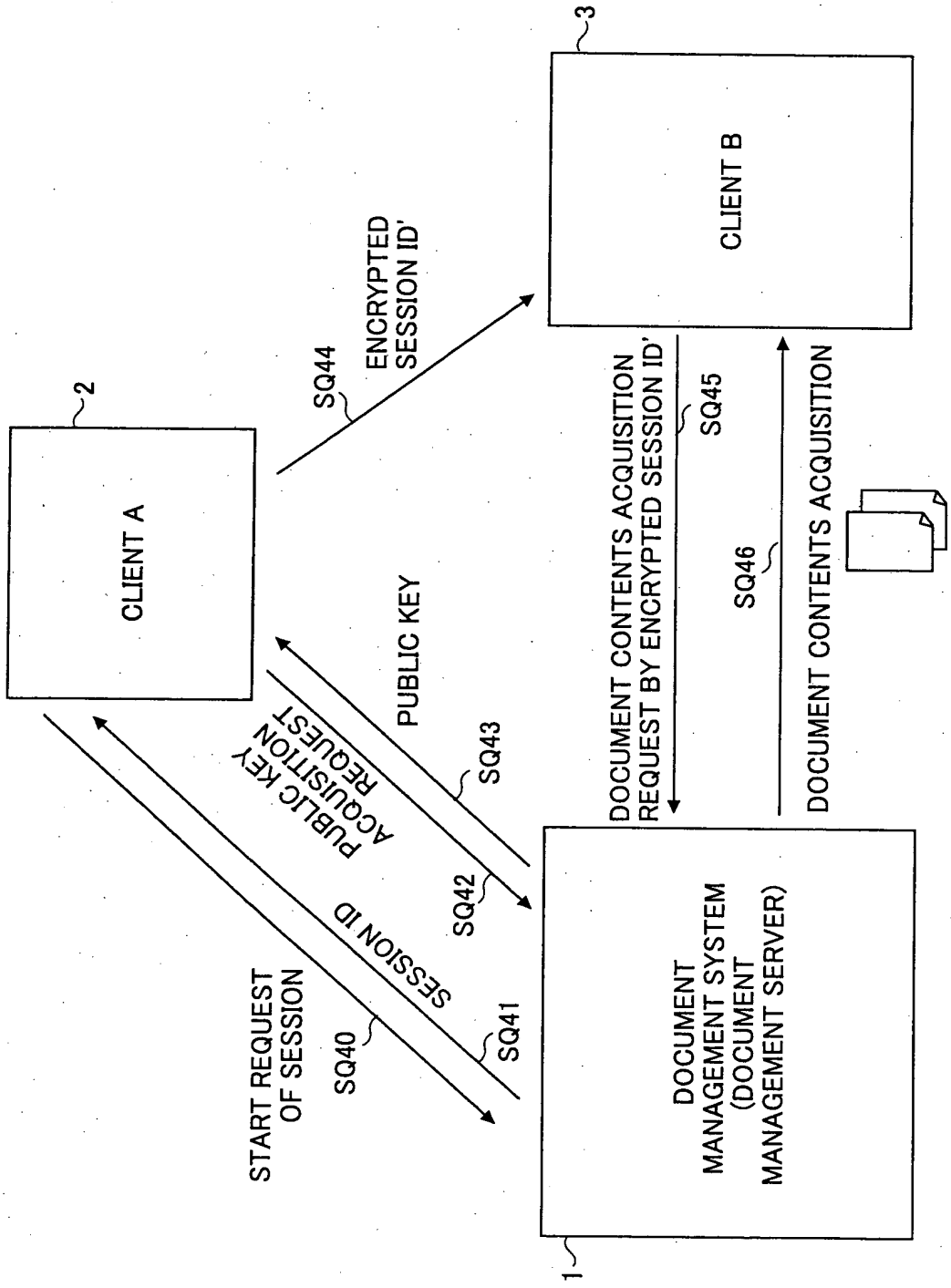

CLIENT A
2
CLIENT B
3
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
1
START REQUEST OF SESSION
SQ40
SESSION ID
SQ41
PUBLIC KEY ACQUISITION REQUEST
SQ42
PUBLIC KEY
SQ43
ENCRYPTED SESSION ID'
SQ44
DOCUMENT CONTENTS ACQUISITION REQUEST BY ENCRYPTED SESSION ID'
SQ45
DOCUMENT CONTENTS ACQUISITION
SQ46

FIG.28

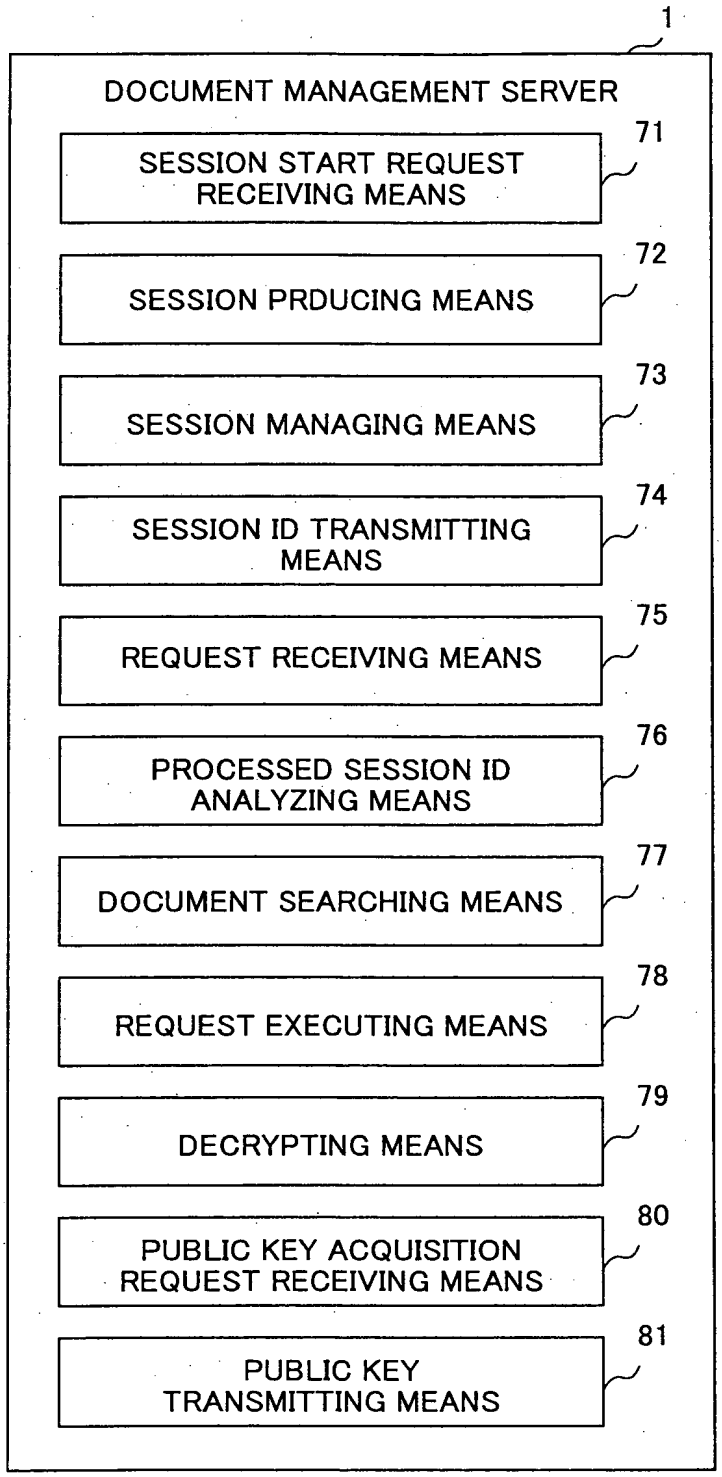

1
DOCUMENT MANAGEMENT SERVER
71
SESSION START REQUEST RECEIVING MEANS
72
SESSION PRDUCING MEANS
73
SESSION MANAGING MEANS
74
SESSION ID TRANSMITTING MEANS
75
REQUEST RECEIVING MEANS
76
PROCESSED SESSION ID ANALYZING MEANS
77
DOCUMENT SEARCHING MEANS
78
REQUEST EXECUTING MEANS
79
DECRYPTING MEANS
80
PUBLIC KEY ACQUISITION REQUEST RECEIVING MEANS
81
PUBLIC KEY TRANSMITTING MEANS

FIG.29

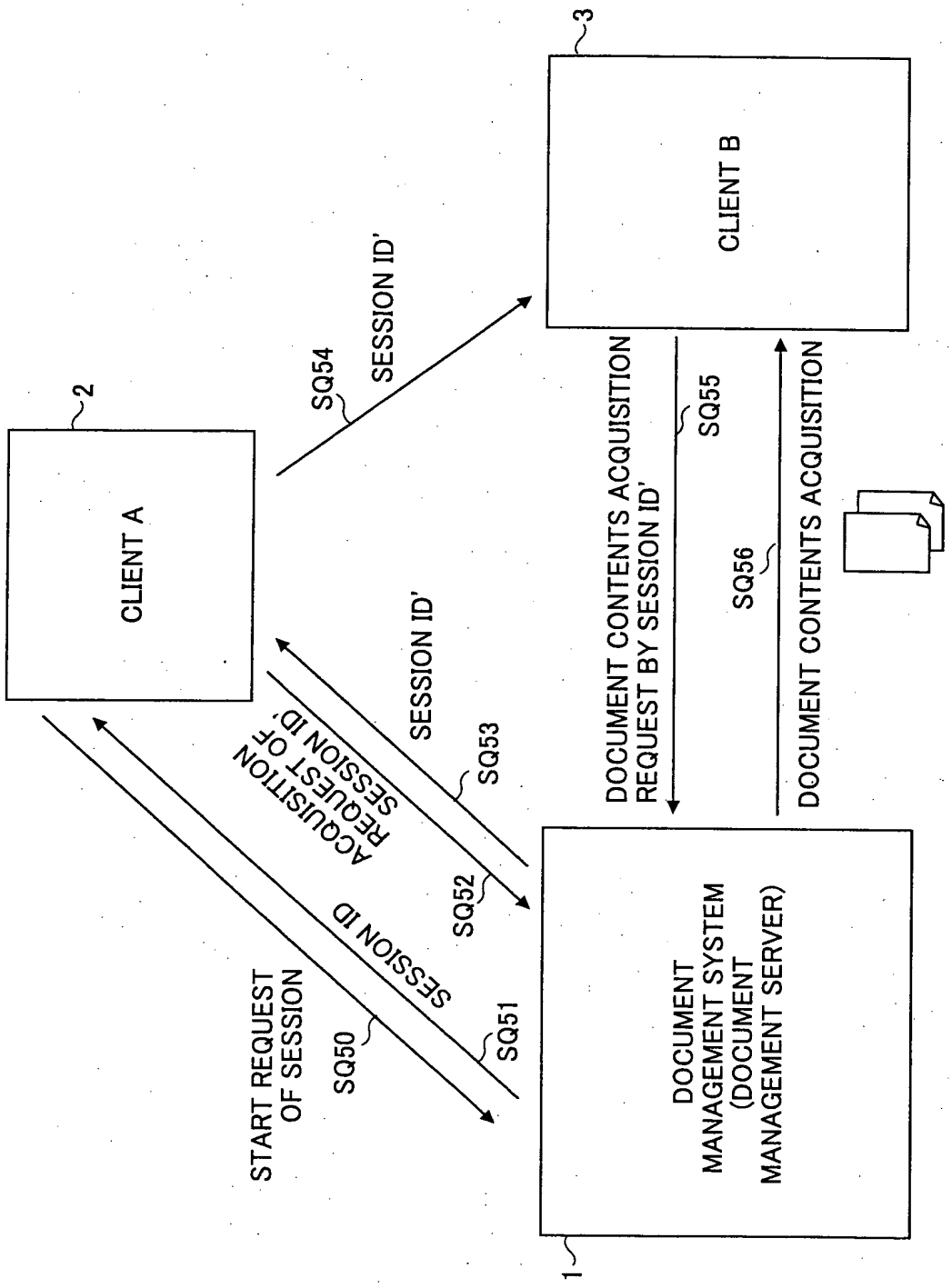

CLIENT A
2
CLIENT B
3
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
1
START REQUEST OF SESSION
SQ50
SESSION ID
SQ51
ACQUISITION REQUEST OF SESSION ID'
SQ52
SESSION ID'
SQ53
SQ54
SESSION ID'
DOCUMENT CONTENTS ACQUISITION REQUEST BY SESSION ID'
SQ55
SQ56
DOCUMENT CONTENTS ACQUISITION

FIG.30

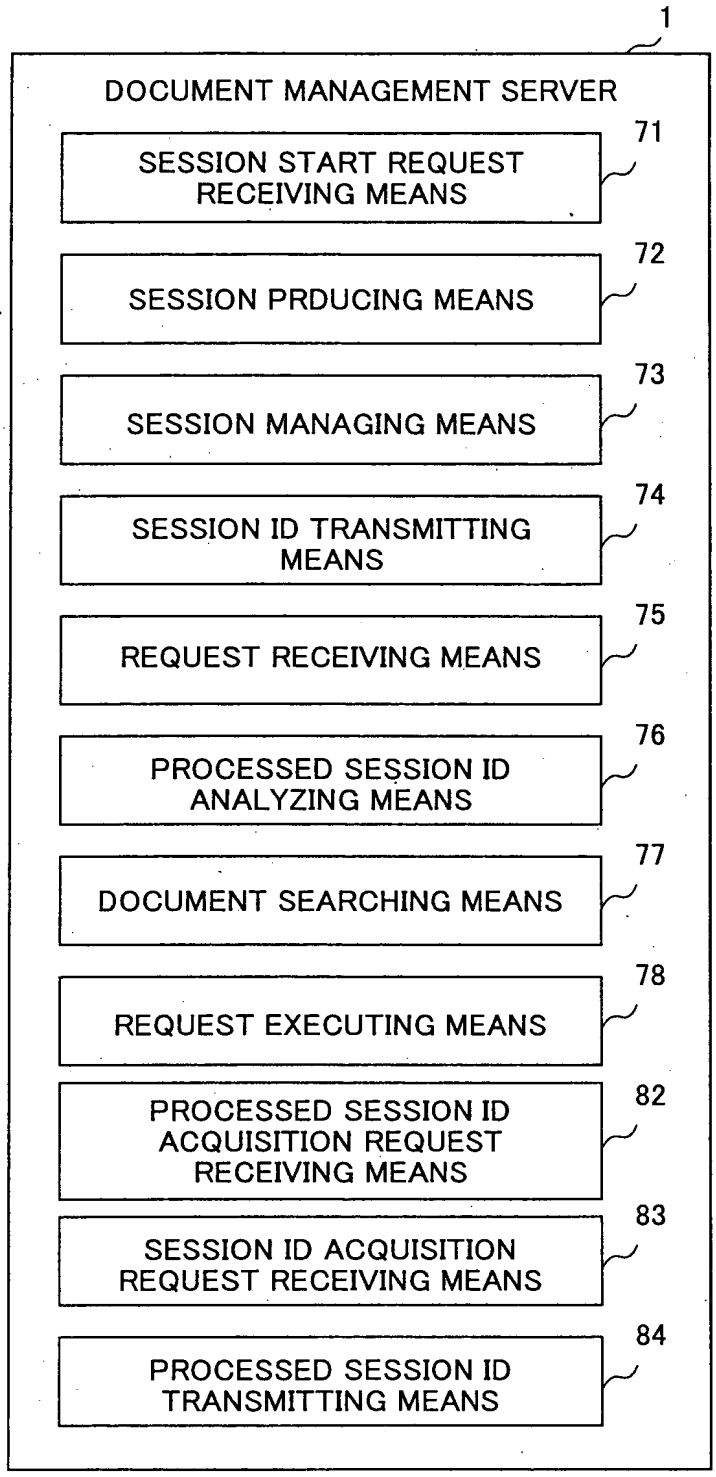

1
DOCUMENT MANAGEMENT SERVER
71
SESSION START REQUEST RECEIVING MEANS
72
SESSION PRDUCING MEANS
73
SESSION MANAGING MEANS
74
SESSION ID TRANSMITTING MEANS
75
REQUEST RECEIVING MEANS
76
PROCESSED SESSION ID ANALYZING MEANS
77
DOCUMENT SEARCHING MEANS
78
REQUEST EXECUTING MEANS
82
PROCESSED SESSION ID ACQUISITION REQUEST RECEIVING MEANS
83
SESSION ID ACQUISITION REQUEST RECEIVING MEANS
84
PROCESSED SESSION ID TRANSMITTING MEANS

FIG.31

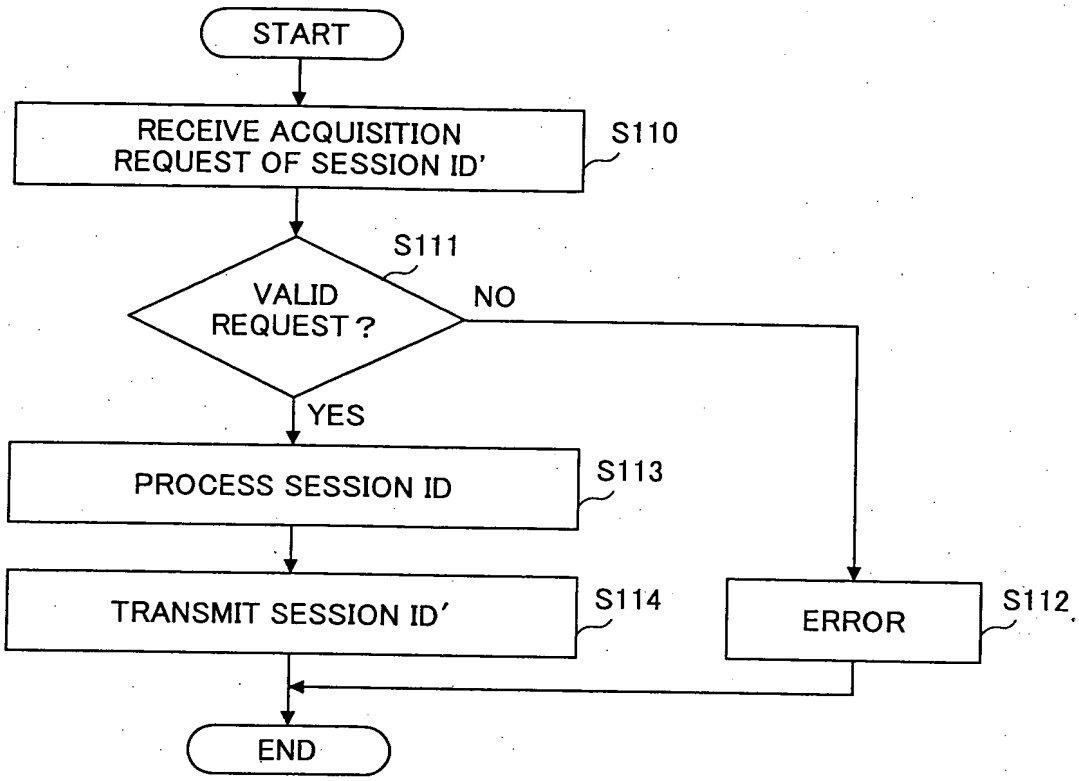


FIG.32

String getNewSessionId(String sessionId, String docId)

FIG.33

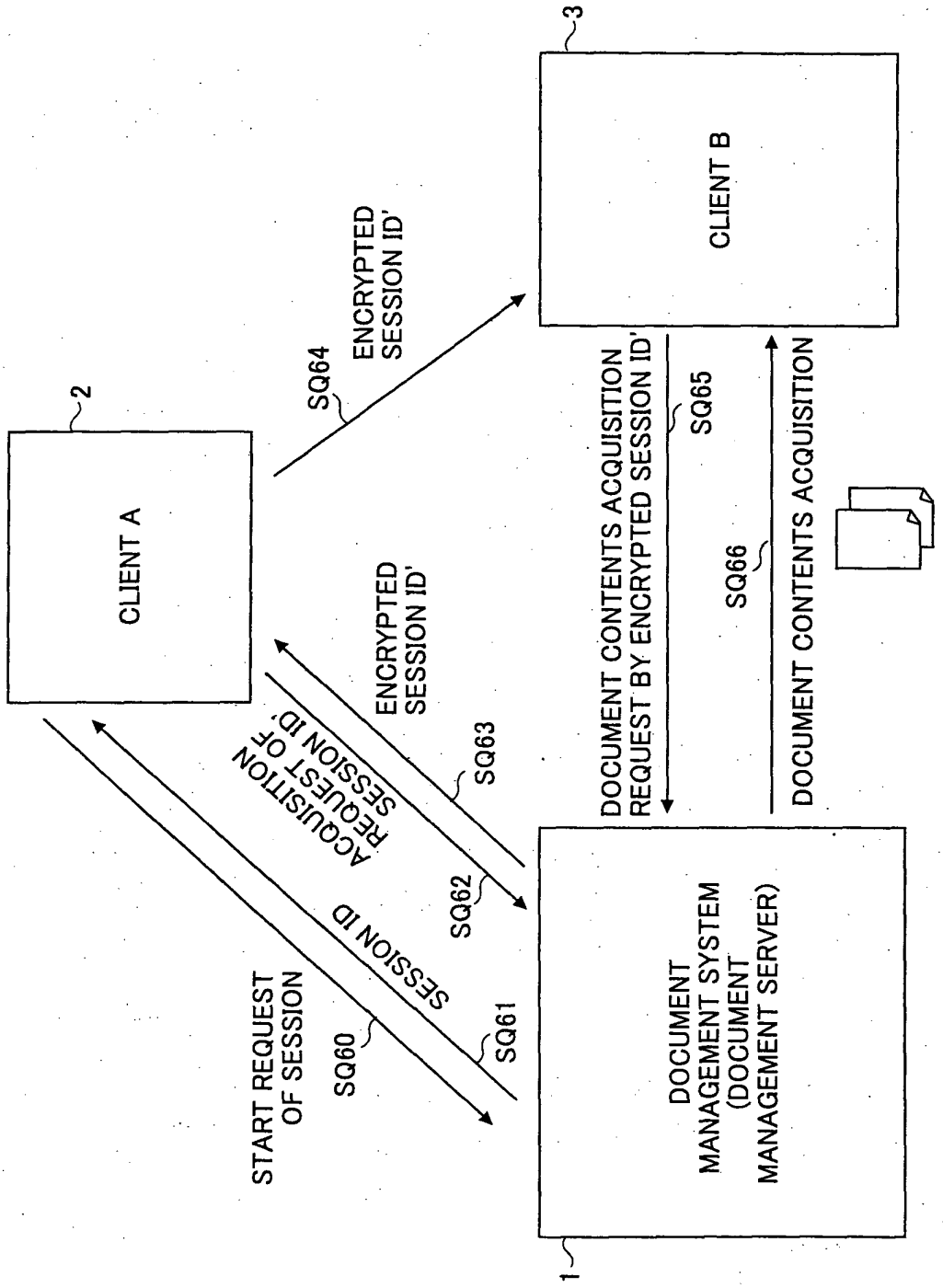

1
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
2
CLIENT A
3
CLIENT B
START REQUEST OF SESSION
SQ60
SESSION ID
SQ61
ACQUISITION REQUEST OF SESSION ID'
SQ62
ENCRYPTED SESSION ID'
SQ63
ENCRYPTED SESSION ID'
SQ64
DOCUMENT CONTENTS ACQUISITION REQUEST BY ENCRYPTED SESSION ID'
SQ65
DOCUMENT CONTENTS ACQUISITION
SQ66

FIG.34

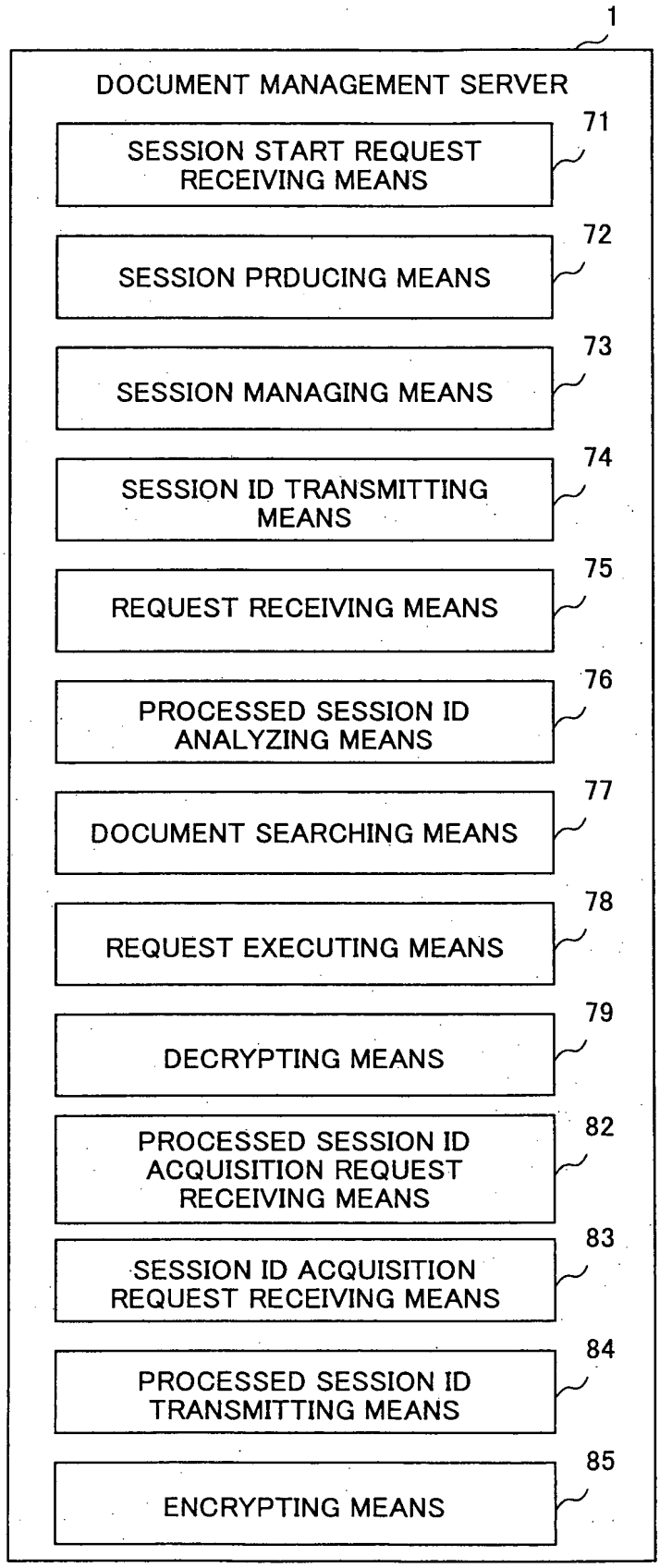

1
DOCUMENT MANAGEMENT SERVER
71
SESSION START REQUEST RECEIVING MEANS
72
SESSION PRDUCING MEANS
73
SESSION MANAGING MEANS
74
SESSION ID TRANSMITTING MEANS
75
REQUEST RECEIVING MEANS
76
PROCESSED SESSION ID ANALYZING MEANS
77
DOCUMENT SEARCHING MEANS
78
REQUEST EXECUTING MEANS
79
DECRYPTING MEANS
82
PROCESSED SESSION ID ACQUISITION REQUEST RECEIVING MEANS
83
SESSION ID ACQUISITION REQUEST RECEIVING MEANS
84
PROCESSED SESSION ID TRANSMITTING MEANS
85
ENCRYPTING MEANS

FIG.35

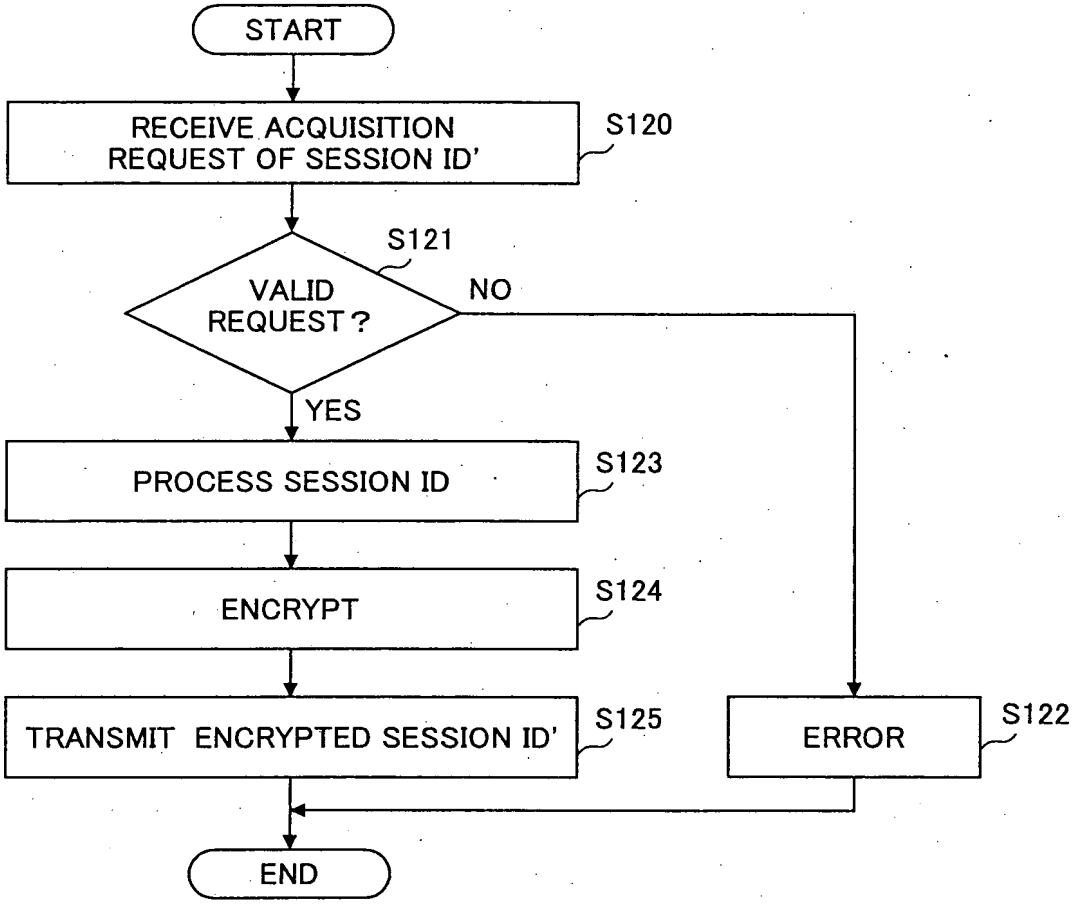


FIG.36

5468746165416878746?method= getDocContent,getProps, putDocConetnt

ORIGINAL SESSION ID　　AVAILABLE METHOD

FIG.37

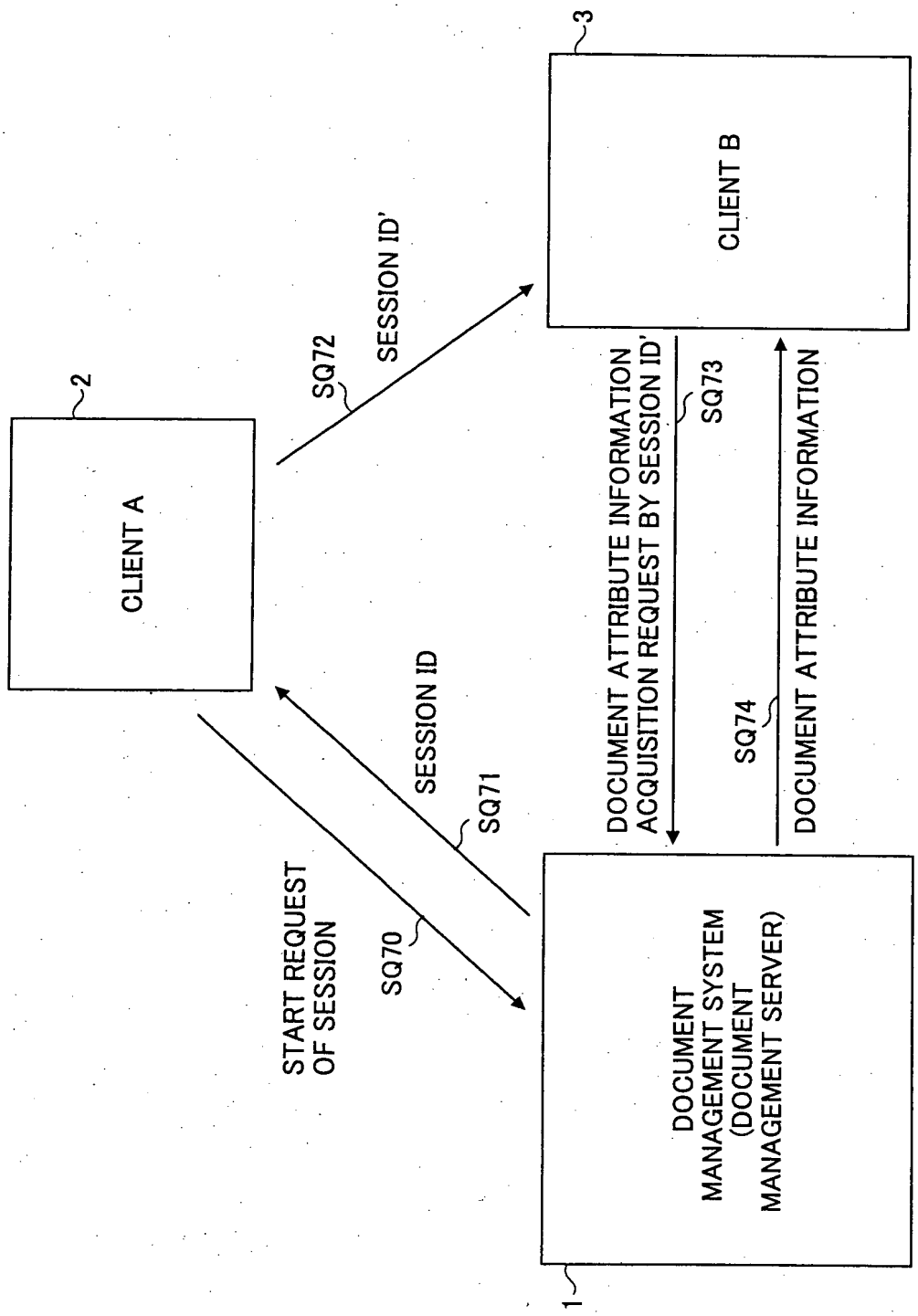
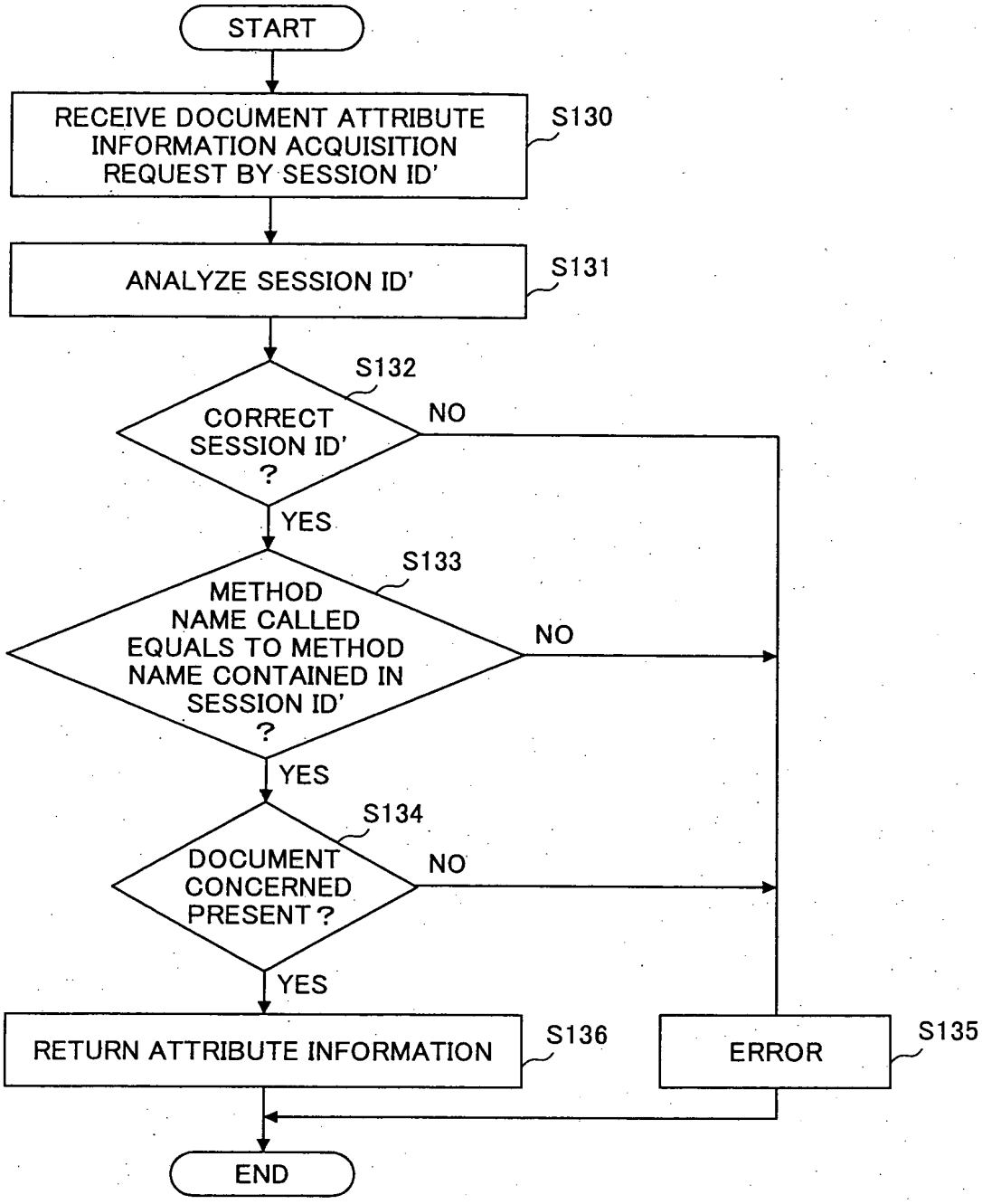

CLIENT A
2
CLIENT B
3
DOCUMENT MANAGEMENT SYSTEM (DOCUMENT MANAGEMENT SERVER)
1
START REQUEST OF SESSION
SQ70
SESSION ID
SQ71
SESSION ID'
SQ72
DOCUMENT ATTRIBUTE INFORMATION ACQUISITION REQUEST BY SESSION ID'
SQ73
DOCUMENT ATTRIBUTE INFORMATION
SQ74

FIG.38


START
RECEIVE DOCUMENT ATTRIBUTE INFORMATION ACQUISITION REQUEST BY SESSION ID'
S130
ANALYZE SESSION ID'
S131
S132
CORRECT SESSION ID' ?
NO
YES
S133
METHOD NAME CALLED EQUALS TO METHOD NAME CONTAINED IN SESSION ID' ?
NO
YES
S134
DOCUMENT CONCERNED PRESENT ?
NO
YES
RETURN ATTRIBUTE INFORMATION
S136
ERROR
S135
END